

## **Engineering Design File**

PROJECT NO. 23083

# **Analysis of Potential Air Emissions from Excavation of WAG 3 Soil Contamination Sites**



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Analysis of Potential Air Emissions from Excavation of WAG 3 Soil				
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	R/A	Typed Name/Organization	Signature	Date
Performer/ Author	N/A	Chris Staley/Applied Geosciences		1/28/04
Technical Checker	R	Paul Ritter/Applied Geosciences		1/28/04
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Approver	A	Greg Stormberg/Applied Geosciences		1/28/04
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## CONTENTS

ACRONYMS.....	5
1. INTRODUCTION.....	7
2. METHODS AND ASSUMPTIONS .....	7
2.1 Contaminant Releases from Excavation .....	7
2.1.1 Radioactive Particulate Releases .....	8
2.1.2 Particulate Releases of Other Contaminants .....	8
2.2 Air Modeling/Dose Assessment.....	9
3. RESULTS.....	9
4. REFERENCES.....	12
Appendix A—Spreadsheets Used in Calculations .....	13
Appendix B—SCREEN3 Code Output Files.....	27
Appendix C—CAP-88 Code Output File .....	39

## TABLES

1. WAG 3 soils remediation project—inorganic contaminant emissions and air concentrations compared to standards .....	10
2. WAG 3 soils remediation project—organic contaminant emissions and air concentrations compared to standards .....	11

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Rev. 11

**ENGINEERING DESIGN FILE**

EDF-3902  
Rev. 0  
Page 4 of 85

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## **ACRONYMS**

AAC	acceptable ambient concentration
AACC	acceptable ambient concentration for a carcinogen
CAP	Clean Air Package
EDF	Engineering Design File
EL	emission limit
EPA	Environmental Protection Agency
INEEL	Idaho National Engineering and Environmental Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
MEI	maximally exposed individual
NL	no limit for a particular contaminant
RfC	Reference Concentration
UCL	upper confidence limit
WAG	waste area group

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# Analysis of Potential Air Emissions from Excavation of WAG 3 Soil Contamination Sites

## 1. INTRODUCTION

This Engineering Design File (EDF) examines potential air emissions and the effects of those emissions on downwind receptors from excavating contaminated soil from nine Waste Area Group (WAG) 3 sites in and around Idaho Nuclear Technology and Engineering Center (INTEC). These contaminated soil areas comprise approximately 88,000 m<sup>2</sup> (88 hectares) of surface area and about 282,000 m<sup>3</sup> of soil. Soil is contaminated with various concentrations of radionuclides, inorganic, and organic contaminants. The site areas and volumes used in this EDF are more conservative than design areas and volumes provided in the Operable Unit 3-13, Group 3 Soils Remedial Design/Remedial Action Work Plan (DOE-ID 2004).

## 2. METHODS AND ASSUMPTIONS

The methods and assumptions for this EDF are found below.

### 2.1 Contaminant Releases from Excavation

Soil sites data used as input to release calculations were from EDF-ER-264 (2002), except for soil volumes, which were calculated based on preliminary design areas and depths. Releases to the atmosphere of contaminated soil particles from excavation of contaminated soil sites are calculated using conservative assumptions. These assumptions include the following:

- All soil to be excavated from a given site is contaminated at the upper confidence limit (UCL) concentration of available soil samples. This is quite conservative because (1) usually, only localized “hot spots” are sampled, and (2) in order to excavate contaminated soil areas to the depths required, it is necessary to excavate a much larger surface area so that appropriate slopes on side-walls can be achieved.
- Soil is excavated at a maximum daily rate of 750 yd<sup>3</sup>/day (574 m<sup>3</sup>/day).
- A work day is 8 hours long.
- A release fraction of 1E-03 (from Appendix D of 40 CFR 61—for particulate solids) is assumed. This fraction is very conservative and can be compared to the Environmental Protection Agency’s (EPA’s) AP-42 (EPA 1995a) release fraction for sand and gravel processing operations, “active storage piles,” of 0.21 kg particulate resuspended per Mg material handled, or 2.1E-04.
- All contaminants are in particulate form or adsorbed to soil particles, and so are released as particulates.
- No credit is taken for reduction in particulate resuspension from wetting (AP-42 [EPA 1995a] allows an 80% reduction).

## 2.1.1 Radioactive Particulate Releases

Releases of radioactive particulates for each radionuclide are calculated using Equation 1:

$$R_i = C_i \times V_y \times D_s \times CF_1 \times CF_2 \times RF \quad (1)$$

where

$R_i$  = release of radionuclide  $i$  to atmosphere, in Ci/year

$C_i$  = UCL soil concentration of radionuclide  $i$ , in pCi/g

$V_y$  = volume of soil removed in one year, in  $m^3$  (soil site-specific)

$D_s$  = soil density (Idaho National Engineering and Environmental Laboratory [INEEL] soils are  $\sim 1.5 \text{ g/cm}^3$ ;  $2.0 \text{ g/cm}^3$  is often used and is conservative)

$CF_1$  = conversion factor from  $m^3$  to  $cm^3$  =  $1E+06$

$CF_2$  = conversion factor from pCi to Ci =  $1E-12$

$RF$  = release fraction =  $1E-03$  (40 CFR 61, Appendix D).

Note that, at a maximum excavation rate of  $750 \text{ yd}^3$  per day, it will take nearly 2 years to excavate all nine soil sites. For purposes of radiological analysis, however, it is assumed that all excavation and releases occur in a single year, which results in a conservative estimate of releases and dose. Table A-2, in Appendix A, documents radiological release calculations.

## 2.1.2 Particulate Releases of Other Contaminants

Particulate releases for contaminants other than radionuclides are calculated using Equation 2:

$$Q_i = C_i \times E_h \times CF_3 \times CF_4 \times RF \quad (2)$$

where

$Q_i$  = maximum hourly release rate of contaminant  $i$ , in lb/hr

$C_i$  = UCL soil concentration of contaminant  $i$ , in mg/kg

$E_h$  = excavation rate, in  $m^3/\text{hour}$  ( $= 71.8$  in this analysis)

$CF_3$  = conversion factor,  $m^3$  soil to kg soil = 1,500 (based on 1.5 g/cc soil density)

$CF_4$  = conversion factor, mg to lb =  $2.2E-06$

$RF$  = release fraction =  $1E-03$  (40 CFR 61, Appendix D).

For noncarcinogens, 24-hour average concentrations are scaled from maximum hourly concentrations by multiplying by the ratio 8:24. For carcinogens, average annual release rates are scaled from maximum hourly release rates, based on the number of hours required to excavate a site compared with the total number of hours (8,766) in the year. Tables A-3 and A-4, found in Appendix A, document calculations for nonradiological releases.

## 2.2 Air Modeling/Dose Assessment

The SCREEN3 code (EPA 1995b) was used to model air concentrations of nonradiological contaminants released from the soil areas. SCREEN3 is, as its name implies, a screening code; as such, results are very conservative. Because of the way SCREEN3 handles area sources, each of the nine areas was modeled separately. Concentrations were modeled to two receptor locations, depending on whether they were carcinogens (chronic exposure at INEEL boundary), or noncarcinogens (acute exposure at the nearest point on U.S. Highway 20). SCREEN3 output files are attached as Appendix B. The outputs of the SCREEN3 model are 1-hour average concentrations. These are adjusted to 24-hour and annual concentrations by multiplying by persistence factors of 0.4 and 0.125, respectively (Staley and Abbott 1998).

Radionuclide releases were modeled with the Clean Air Package (CAP)-88 code (EPA 1990). CAP-88 is approved by the EPA for modeling radionuclide emissions to demonstrate compliance with the National Emissions Standards for Hazardous Air Pollutants. Because radiological dose is calculated on an annual basis (mrem/yr), only the total release of each radionuclide is needed. The dose is calculated to a hypothetical maximally exposed individual (MEI) member of the public living on the INEEL boundary. The location is determined by modeling to the nearest boundary location within each of 16 wind direction sectors, then choosing the maximum. For INTEC, the MEI location is 13,900 m south-southwest (SSW) of INTEC (Staley and Abbott 1998). Ten-year average meteorological data from the 10-meter level of the GRID 3 meteorological tower were used for the modeling. The CAP-88 output file is attached as Appendix C.

## 3. RESULTS

Calculated maximum releases and concentrations of inorganic and organic contaminants are compared with appropriate standards in Tables 1 and 2. While some releases could exceed emissions limits (ELs) set by the State of Idaho, all downwind airborne concentrations at the two receptor locations, based on conservative releases and dispersion calculations, would be below applicable standards. Where a State of Idaho limit (acceptable ambient concentration [AAC] or acceptable ambient concentration for a carcinogen [AAACC]) was not available, EPA's Reference Concentration (RfC) was used as available. The RfC is a concentration in air to which an individual can be exposed continuously without adverse health effects (EPA 1998).

Modeled radionuclide releases resulted in a dose to the MEI of 2.6E-02 mrem. This dose is based on very conservative assumptions, including that all releases occur within 1 year. At the stated maximum excavation rate of 750 yd<sup>3</sup>/day, about 500 working days, or about 2 years, would be required to excavate the nine sites. The dose calculated herein is well below the 0.1-mrem standard set by EPA (40 CFR 61) for requiring a permit to construct or modify.

Table 1. WAG 3 soils remediation project—inorganic contaminant emissions and air concentrations compared to standards.

Carcinogens				
	Maximum Emission Rate (lb/hr)	State of Idaho Emission Limit (EL- lb/hr)	Annual Average Concentration at Site Boundary ( $\mu\text{g}/\text{m}^3$ )	State of Idaho AACC ( $\mu\text{g}/\text{m}^3$ )
Arsenic	1.61E-03	1.50E-06	7.78E-05	2.30E-04
Beryllium	9.48E-05	2.80E-05	4.30E-08	4.20E-03
Cadmium	3.08E-04	3.70E-06	8.11E-06	5.60E-04
Chromium	5.21E-03	3.30E-02	1.37E-04	2.50E-02
Nickel	3.32E-03	2.70E-05	1.50E-06	4.20E-03
Noncarcinogens				
	Maximum Emission Rate (lb/hr)	State of Idaho Emission Limit (EL- lb/hr)	24-hour average Concentration at Highway ( $\text{mg}/\text{m}^3$ )	State of Idaho AAC ( $\text{mg}/\text{m}^3$ )
Aluminum	9.24E-01	6.67E-01	7.02E-04	5.00E-01
Barium	7.11E-02	3.30E-02	7.29E-05	2.50E-02
Calcium <sup>a</sup>	5.45E+00	1.33E-01	4.14E-03	1.00E-01
Cobalt	9.00E-04	3.30E-03	6.84E-07	2.50E-03
Copper	2.61E-03	6.70E-02	1.98E-06	5.00E-02
Fluoride	4.98E-04	1.67E-01	3.80E-07	1.25E-01
Iron	1.87E+00	6.70E-02	1.42E-03	5.00E-02
Lead	9.95E-03	—	3.04E-06	1.00E-04 <sup>b</sup>
Magnesium	7.35E-01	6.67E-01	5.58E-04	5.00E-01
Manganese	3.32E-02	3.33E-01	2.52E-05	2.50E-01
Mercury	7.11E-03	1.00E-03	7.29E-06	5.00E-04
Potassium	1.59E-01	1.33E-01	1.21E-04	1.00E-01
Selenium	8.06E-05	1.30E-02	6.27E-08	1.00E-02
Sodium	3.55E-02	1.33E-01	2.70E-05	1.00E-01
Vanadium	3.79E-03	3.00E-03	2.88E-06	2.50E-03
Zinc	1.07E-02	6.67E-01	8.10E-06	5.00E-01

a. Limits are for calcium oxide.

b. Limit is State of Idaho criterion (quarterly average) for requiring permit to construct.

AAC = acceptable ambient concentration

AACC = acceptable ambient concentration for a carcinogen

EL = emission limit

WAG = waste area group

Table 2. WAG 3 soils remediation project—organic contaminant emissions and air concentrations compared to standards.

Carcinogens				
	Maximum Emission Rate (lb/hr)	State of Idaho Emission Limit (EL- lb/hr)	Annual Average Concentration at Site Boundary ( $\mu\text{g}/\text{m}^3$ )	State of Idaho AAC ( $\mu\text{g}/\text{m}^3$ )
Arochlor 1254	5.45E-05	6.60E-05	1.43E-06	1.00E-02
Arochlor 1260	9.95E-05	6.60E-05	2.62E-06	1.00E-02
Benzene	2.20E-04	8.00E-04	1.13E-05	1.20E-01
Benzo(a)anthracene	1.47E-04	2.00E-06	7.54E-06	3.00E-04
Benzo(a)pyrene	8.29E-05	2.00E-06	4.25E-06	3.00E-04
Benzo(b)fluoranthene	1.04E-04	2.00E-06	5.35E-06	3.00E-04
bis (2-ethylhexyl) phthalate	1.47E-04	2.80E-02	2.08E-06	4.20E+00
Methylene chloride	6.87E-05	1.60E-03	1.81E-06	2.40E-01
Tetrachloroethene	2.13E-06	NL <sup>a</sup>	1.09E-07	3.50E+01 <sup>b</sup>
Trichloroethene	2.27E-05	NL	1.17E-06	2.10E+01 <sup>b</sup>

  

Noncarcinogens				
	Maximum Emission Rate (lb/hr)	State of Idaho Emission Limit (EL- lb/hr)	24-hour average Concentration at Highway ( $\text{mg}/\text{m}^3$ )	State of Idaho AAC ( $\text{mg}/\text{m}^3$ )
1,1,1-Trichloroethane	5.45E-06	NL	5.59E-09	1.23E-01 <sup>b</sup>
4-methyl-2-pentanol	9.24E-06	NL	9.48E-09	2.50E+04 <sup>c</sup>
Acenaphthene	8.77E-06	NL	7.07E-09	2.10E-01 <sup>b</sup>
Acetone	1.59E-04	1.19E+02	1.63E-07	8.90E+01
Anthracene	8.29E-05	NL	6.69E-08	1.10E+00 <sup>b</sup>
Carbon disulfide	1.56E-05	2.00E+00	1.60E-08	1.50E+00
Chrysene	1.42E-04	NL	1.46E-07	2.10E-06 <sup>d</sup>
Fluoranthene	3.55E-04	NL	3.64E-07	1.40E-01 <sup>b</sup>
Fluorene	1.45E-05	1.33E-01	1.17E-08	1.00E-01
Kepone	9.48E-05	NL	7.65E-08	
Phenanthrene	1.92E-04	NL	1.97E-07	
Pyrene	4.98E-05	NL	4.01E-08	1.10E-01 <sup>b</sup>
Toluene	3.08E-04	2.50E+01	3.16E-07	1.88E+01
Tributylphosphate	1.09E-04	1.47E-01	1.12E-07	1.10E-01
Xylene (ortho)	1.18E-06	2.90E+01	1.21E-09	2.18E+01
Xylene (total)	8.77E-04	2.90E+01	8.99E-07	2.18E+01

a. NL = no limit listed for this contaminant.

b. These are EPA reference concentrations (RfC, EPA 1998).

c. Occupational Safety and Health Administration (OSHA) permissible exposure limit.

d. EPA inhalation unit risk factor (URF, in [ $\mu\text{g}/\text{m}^3$ ]<sup>-1</sup>, EPA 1998)

AAC = acceptable ambient concentration

AACC = acceptable ambient concentration for a carcinogen

EL = emission limit

WAG = waste area group.

#### 4. REFERENCES

- 40 CFR 61, 2003, "National Emission Standards for Hazardous Air Pollutants," *Code of Federal Regulations*, Office of the Federal Register, September 2003.
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## **Appendix A**

### **Spreadsheets Used in Calculations**

Table A-1. WAG 3 soils project – site physical data

Table A-2. WAG 3 soils project – radiological releases worksheet

Table A-3. WAG 3 soils project – inorganic contaminants worksheet

Table A-4. WAG 3 soils project – organic contaminants worksheet

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Table A-1. WAG 3 soils project—site physical data.

Site	Approximate Dimensions (m) <sup>a</sup>	Area (m <sup>2</sup> ) <sup>a</sup>	Soil Volume (m <sup>3</sup> ) <sup>b</sup>	Soil mass (grams)	Hours to excavate <sup>c</sup>	Distance (m) to	
						Hwy 20/26	INEEL Boundary
CPP-03	153 × 44	6,732	9,749	1.46E+10	136	5,310	13,000
CPP-34A	22 × 132	2,783	35,187	5.28E+10	491	6,470	14,160
CPP-34B	11 × 73	803	11,737	1.76E+10	164	6,400	14,090
CPP-37A	66 × 71	4,686	7,428	1.11E+10	104	6,310	14,000
CPP-37B	133 × 92	12,236	42,911	6.44E+10	598	6,220	13,910
CPP-37C	126 × 144	18,144	63,630	9.54E+10	887	6,150	13,840
CPP-67A	152 × 152	23,104	60,567	9.09E+10	1,531	5,150	12,600
CPP-67B	125 × 146	18,250	49,199	7.38E+10			
CPP-97	109 × 46	1,147	1,124	1.69E+09	16	6,430	14,120
		87,885	281,532	4.22E+11	g soil total		13,715
				4.22E+08	kg soil total		

a. Dimensions and areas are approximate and based on maps. These are used for SCREEN3 modeling only.

b. Source: Volumes are based on preliminary design areas and depths.

c. Assumes 574 m<sup>3</sup>/day (750 yd<sup>3</sup>/day), 8 hrs/day

Table A-2. WAG 3 soils project—radiological releases worksheet.

Release Site	Radionuclide	Detects	Nondetects	Total	Mean	St Dev	UCL	Units	Ci Available	Ci Released	Total Ci Released
CPP-67	Am-241	9	11	20	7.10E-01	1.70E+00	2.40E+00	pCi/g	3.95E-01	3.95E-04	3.95E-04 Am-241
CPP-67	Ce-144	12	8	20	7.90E-05	6.80E-05	1.50E-04	pCi/g	2.47E-05	2.47E-08	2.47E-08 Ce-144
CPP-67	Co-58	10		10	2.40E-16	9.70E-19	2.40E-16	pCi/g	3.95E-17	3.95E-20	3.95E-20 Co-58
CPP-67	Co-60	15	5	20	1.80E-01	1.70E-01	3.40E-01	pCi/g	5.60E-02	5.60E-05	5.60E-05 Co-60
CPP-67	Cs-134	16	5	21	3.50E-02	2.80E-02	6.20E-02	pCi/g	1.02E-02	1.02E-05	1.02E-05 Cs-134
CPP-03	Cs-137	8		8	2.00E+01	2.30E+01	3.50E+01	pCi/g	3.36E-01	3.36E-04	
CPP-34	Cs-137	20		20	3.10E+02	5.60E+02	8.70E+02	pCi/g	6.12E+01	6.12E-02	
CPP-37A	Cs-137	9	5	14	6.00E-01	8.90E-01	1.70E+00	pCi/g	1.89E-02	1.89E-05	
CPP-37B	Cs-137	19	9	28	1.00E+00	1.30E+00	2.10E+00	pCi/g	1.35E-01	1.35E-04	
CPP-67	Cs-137	21		21	1.80E+01	2.30E+01	4.10E+01	pCi/g	6.75E+00	6.75E-03	
CPP-97	Cs-137	11		11	2.90E+01	2.80E+01	6.70E+01	pCi/g	1.13E-01	1.13E-04	6.86E-02 Cs-137
CPP-37A	Np-237	12	2	14	5.90E-01	3.30E-01	9.90E-01	pCi/g	1.10E-02	1.10E-05	
CPP-37B	Np-237	28		28	4.80E-01	1.80E-01	6.30E-01	pCi/g	4.06E-02	4.06E-05	
CPP-67	Np-237	11		11	1.10E+00	2.80E-01	1.30E+00	pCi/g	2.14E-01	2.14E-04	2.66E-04 Np-237
CPP-37B	Pu-238	10	18	28	8.20E-02	1.10E-01	1.80E-01	pCi/g	2.96E-02	2.96E-05	
CPP-67	Pu-238	12	9	21	1.60E+00	2.70E+00	4.20E+00	pCi/g	6.92E-01	6.92E-04	
CPP-97	Pu-238	9	2	11	1.70E-01	1.30E-01	3.50E-01	pCi/g	5.90E-04	5.90E-07	7.22E-04 Pu-238
CPP-67	Ru-103	10		10	8.30E-29	6.10E-31	8.40E-29	pCi/g	1.38E-29	1.38E-32	1.38E-32 Ru-103
CPP-67	Ru-106	15	5	20	1.60E-03	1.70E-03	3.20E-03	pCi/g	5.27E-04	5.27E-07	5.27E-07 Ru-106
CPP-67	Sb-125	14	6	20	5.60E-02	4.40E-02	1.00E-01	pCi/g	1.65E-02	1.65E-05	1.65E-05 Sb-125
CPP-34	Sr-90	43		43	6.10E+02	1.10E+03	1.40E+03	pCi/g	9.85E+01	9.85E-02	
CPP-37A	Sr-90	9	5	14	2.20E-01	1.70E-01	4.30E-01	pCi/g	4.79E-03	4.79E-06	
CPP-37B	Sr-90	23	5	28	5.90E-01	8.40E-01	1.30E+00	pCi/g	8.37E-02	8.37E-05	
CPP-67	Sr-90	17	4	21	1.50E+00	3.20E+00	4.60E+00	pCi/g	7.57E-01	7.57E-04	
CPP-97	Sr-90	11		11	5.00E+01	8.00E+01	1.60E+02	pCi/g	2.70E-01	2.70E-04	9.97E-02 Sr-90
CPP-97	Tc-99	11		11	1.50E+00	4.20E-01	1.70E+00	pCi/g	2.87E-03	2.87E-06	2.87E-06 Tc-99

Table A-2. (continued).

Release Site	Radionuclide	Detects	Nondetects	Total	Mean	St Dev	UCL	Units	Ci Available	Ci Released	Total Ci Released
CPP-34	U-234	19		19	1.20E+00	3.60E-01	1.60E+00	pCi/g	1.13E-01	1.13E-04	
CPP-37A	U-234	10	2	12	3.30E-01	2.00E-01	5.90E-01	pCi/g	6.57E-03	6.57E-06	
CPP-37B	U-234	11		11	4.00E-01	3.00E-01	8.10E-01	pCi/g	5.21E-02	5.21E-05	
CPP-67	U-234	21		21	1.00E+00	7.10E-01	1.70E+00	pCi/g	2.80E-01	2.80E-04	
CPP-97	U-234	11		11	7.80E-01	1.30E-01	8.50E-01	pCi/g	1.43E-03	1.43E-06	4.53E-04 U-234
CPP-34	U-238	20		20	1.30E+00	5.50E-01	1.90E+00	pCi/g	1.34E-01	1.34E-04	
CPP-37A	U-238	18		18	8.50E-01	1.20E+00	2.10E+00	pCi/g	2.34E-02	2.34E-05	
CPP-37B	U-238	26		26	7.90E-01	1.50E+00	2.10E+00	pCi/g	1.35E-01	1.35E-04	
CPP-67	U-238	21		21	8.60E-01	5.90E-01	1.40E+00	pCi/g	2.31E-01	2.31E-04	
CPP-97	U-238	9	2	11	8.30E-01	3.60E-01	1.30E+00	pCi/g	2.19E-03	2.19E-06	5.25E-04 U-238

Table A-3. WAG 3 soils project— inorganic contaminants worksheet.

Release Site	Compound	Detects	Nondetects	Total	Mean	St Dev	UCL (mg/kg)	EL (lb/hr)	Highway	Site Bound	SCREEN3 Emission factor (µg/m <sup>3</sup> /lb/hr)		Annual Average Concentration at Site Boundary (µg/m <sup>3</sup> )	AAC/AACC	RfC (mg/m <sup>3</sup> )
											Calculated annual average emission rate (lb/hr)	Calculated acute emission rate (lb/hr)			
<b>Carcinogens</b>															
CPP-34A	Arsenic	19	1	20	4.00E+00	2.10E+00	6.00E+00	1.42E-03	7.96E-05	1.50E-06	5.65	2.02	2.01E-05	2.30E-04	1.10E-03
CPP-34B	Arsenic	19		19	5.70E+00	1.10E+00	6.80E+00	1.42E-03	2.65E-05	5.73	2.04	6.77E-06			
CPP-37A	Arsenic	19		28	4.40E+00	1.80E+00	6.00E+00	1.42E-03	9.70E-05	5.84	2.05	4.88E-06			
CPP-37B	Arsenic	28		11	4.90E+00	2.80E+00	6.40E+00	1.42E-03	1.44E-04	6.05	2.08	2.51E-05			
CPP-37C	Arsenic	11		11	4.20E+00	8.90E-01	4.70E+00	1.11E-03	1.99E-06	7.69	2.35	3.74E-05			
CPP-67	Arsenic	11		11	3.60E-01	6.30E-02	4.00E-01	9.48E-05	1.69E-07	1.61E-03	5.70	2.03	7.78E-05		
CPP-97	Beryllium	11		11	3.60E-01	6.30E-02	4.00E-01	9.48E-05	1.69E-07	2.80E-05	5.70	2.03	4.30E-08	4.20E-03	2.00E-02
CPP-37A	Cadmium	14		14	8.30E-01	3.50E-01	9.90E-01	2.35E-04	2.77E-06	3.70E-06	5.84	2.05	7.10E-07	5.60E-04	3.50E-03
CPP-37B	Cadmium	11		11	1.10E+00	4.00E-01	1.30E+00	3.08E-04	2.10E-05	5.96	2.07	5.44E-06			
CPP-37C	Cadmium	11		11	1.10E+00	4.00E-01	1.30E+00	3.08E-04	3.12E-05	6.05	2.08	8.11E-06			
CPP-97	Cadmium	11		11	3.00E-01	5.30E-02	3.20E-01	7.58E-05	1.36E-07	5.70	2.03	3.44E-08			
CPP-34A	Chromium	20		20	1.50E+01	4.10E+00	1.90E+01	4.50E-03	2.52E-04	3.30E-02	5.65	2.02	6.36E-05	2.50E-02	3.5
CPP-34B	Chromium	20		20	1.50E+01	4.10E+00	1.90E+01	4.50E-03	8.41E-05	5.73	2.04	2.14E-05			
CPP-37A	Chromium	14		14	1.90E+01	5.60E+00	2.10E+01	4.98E-03	5.88E-05	5.84	2.05	1.51E-05			
CPP-37B	Chromium	11		11	1.60E+01	4.50E+00	2.20E+01	5.21E-03	3.56E-04	5.96	2.07	9.21E-05			
CPP-37C	Chromium	11		11	1.10E+01	2.10E+00	2.20E+01	5.21E-03	5.28E-04	6.05	2.08	1.37E-04			
CPP-97	Chromium	11		11	1.10E+01	2.10E+00	1.20E+01	2.84E-03	5.08E-06	0.033	5.70	2.03	1.29E-06		
CPP-97	Nickel	11		11	1.30E+01	2.30E+00	1.40E+01	3.32E-03	5.93E-06	2.70E-05	5.70	2.03	1.50E-06	4.20E-03	
<b>Non-Carcinogens</b>															
CPP-97	Aluminum	11		11	3.50E+03	7.30E+02	3.90E+03	9.24E-01		6.67E-01	5.70	2.03	7.02E-04	1.88E-03	0.5
CPP-34A	Barium	20		20	1.10E+02	4.90E+01	1.60E+02	3.79E-02		3.30E-02	5.65	2.02	2.86E-05		2.50E-02
CPP-34B	Barium	20		20	1.10E+02	4.90E+01	1.60E+02	3.79E-02		5.73	2.04	2.90E-05			
CPP-37A	Barium	13		13	1.30E+02	4.80E+01	1.60E+02	3.79E-02		5.84	2.05	2.95E-05			
CPP-37B	Barium	11		11	1.10E+02	4.40E+01	1.40E+02	3.32E-02		5.96	2.07	2.64E-05			
CPP-37C	Barium	11		11	1.10E+02	4.40E+01	1.40E+02	3.32E-02		6.05	2.08	2.68E-05			
CPP-67	Barium	11		11	2.30E+02	1.20E+02	3.00E+02	7.11E-02		7.69	2.35	7.29E-05			

Table A-3. (continued).

Release Site	Compound	Detects	Nondetects	Total	Mean	St Dev	UCL (mg/kg)	Calculated acute emission rate (lb/hr)	Calculated annual average emission rate (lb/hr)	EL (lb/hr)	SCREEN3 Emission factor ( $\mu\text{g}/\text{m}^3/\text{lb}/\text{hr}$ )			Annual Average Concentration at Site Boundary ( $\mu\text{g}/\text{m}^3$ )	AAC/AACC	RfC ( $\text{mg}/\text{m}^3$ )
											Highway	Site Bound.	24-hour average Concentration at Highway ( $\text{mg}/\text{m}^3$ )			
CPP-97	Barium	11		11	6.50E+01	1.10E+01	7.10E+01	1.68E-02			5.70	2.03	1.28E-05			
							max		7.11E-02							
CPP-97	Calcium	11		11	1.90E+04	7.20E+03	2.30E+04	5.45E+00		1.33E-01	5.70	2.03	4.14E-03		1.00E-01	
CPP-97	Cobalt	11		11	3.50E+00	5.90E-01	3.80E+00	9.00E-04		3.30E-03	5.70	2.03	6.84E-07		2.50E-03	
CPP-97	Copper	11		11	9.90E+00	1.80E+00	1.10E+01	2.61E-03		6.70E-02	5.70	2.03	1.98E-06		5.00E-02	
CPP-34A	Fluoride	15		15	1.90E+00	3.70E-01	2.10E+00	4.98E-04		1.67E-01	5.65	2.02	3.75E-07		1.25E-01	
CPP-34B		15		15	1.90E+00	3.70E-01	2.10E+00	4.98E-04		1.67E-01	5.73	2.04	3.80E-07			
CPP-97	Iron	11		11	7.20E+03	1.30E+03	7.90E+03	1.87E+00		6.70E-02	5.70	2.03	1.42E-03		5.00E-02	
CPP-34A	Lead	20		20	1.40E+01	2.80E+01	4.20E+01	9.95E-03			5.65	2.02	7.50E-06		1.00E-04	
CPP-34B		20		20	1.40E+01	2.80E+01	4.20E+01	9.95E-03			5.73	2.04	7.60E-06			
CPP-37A	Lead	19		19	1.10E+01	3.50E+00	1.20E+01	2.84E-03			5.84	2.05	2.21E-06			
CPP-37B	Lead	28		28	9.60E+00	4.60E+00	1.30E+01	3.08E-03			5.96	2.07	2.45E-06			
CPP-37C		28		28	9.60E+00	4.60E+00	1.30E+01	3.08E-03			6.05	2.08	2.48E-06			
CPP-67A	Lead	11		11	1.10E+01	3.30E+00	1.30E+01	3.08E-03			7.69	2.35	3.16E-06			
CPP-67B		11		11	1.10E+01	3.30E+00	1.30E+01	3.08E-03			7.69	2.35	3.16E-06			
CPP-97	Lead	11		11	6.20E+00	1.20E+00	6.80E+00	1.61E-03			5.70	2.03	1.22E-06			
						max		9.95E-03								
CPP-97	Magnesium	11		11	2.80E+03	5.00E+02	3.10E+03	7.35E-01		6.67E-01	5.70	2.03	5.58E-04		5.00E-01	
CPP-97	Manganese	11		11	1.30E+02	2.40E+01	1.40E+02	3.32E-02		3.33E-01	5.70	2.03	2.52E-05		2.50E-01	
CPP-67A	Mercury	9	1	10	1.10E+01	1.40E+01	3.00E+01	7.11E-03		1.00E-03	7.69	2.35	7.29E-06		5.00E-04	
CPP-67B		1		10	1.10E+01	1.40E+01	3.00E+01	7.11E-03		1.00E-03	7.69	2.35	7.29E-06			
CPP-97	Potassium	11		11	6.00E+02	1.20E+02	6.70E+02	1.59E-01		1.33E-01	5.70	2.03	1.21E-04		1.00E-01	
CPP-37A	Selenium	12		12	2.40E-01	7.80E-02	3.40E-01	8.06E-05		1.30E-02	5.84	2.05	6.27E-08		1.00E-02	
CPP-97	Sodium	11		11	9.80E+01	3.90E+01	1.50E+02	3.55E-02		1.33E-01	5.70	2.03	2.70E-05		1.00E-01	
CPP-97	Vanadium	11		11	1.40E+01	3.10E+00	1.60E+01	3.79E-03		3.00E-03	5.70	2.03	2.88E-06		2.50E-03	
CPP-97	Zinc	11		11	4.10E+01	7.50E+00	4.50E+01	1.07E-02		6.67E-01	5.70	2.03	8.10E-06		5.00E-01	

Table A-4. WAG 3 soils project—organic contaminants worksheet.

Site	State of Idaho Emission Limit (lb/hr)	Calculated acute emission rate (lb/hr)	mg/kg	Calculated acute emission rate (lb/hr)	5.45E-06	NL	SCREEN3 Emission factor ( $\mu\text{g}/\text{m}^3/\text{lb}/\text{hr}$ )		Annual Average Concentration at Site Boundary ( $\mu\text{g}/\text{m}^3$ )	AAC (mg/m <sup>3</sup> )	Annual Average Concentration at Highway Site Bound. (mg/m <sup>3</sup> )	AAC (mg/m <sup>3</sup> )	Annual Average Concentration at Highway (mg/m <sup>3</sup> )
							Highway	Site Bound.					
CPP-34A	1,1,1-Trichloroethane	2.30E-02	5.45E-06	5.45E-06		NL		5.65		1.23E-08	1.68E-08		
CPP-34B		2.30E-02	5.45E-06					5.73		1.25E-08			
CPP-37A		5.00E-03	1.18E-06					5.84		2.77E-09			
CPP-37B		2.30E-02	5.45E-06					5.96		1.30E-08			
CPP-37C		2.30E-02	5.45E-06					6.05		1.32E-08			
CPP-67A		2.30E-02	5.45E-06					7.69		1.68E-08			
CPP-67B		2.30E-02	5.45E-06					7.69		1.68E-08			
CPP-97		2.30E-02	5.45E-06					5.70		1.24E-08			
							max						
CPP-34A	4-Methyl-2-Pentanol	3.90E-02	9.24E-06	9.24E-06		NL		5.65		2.09E-08	2.84E-08		
CPP-34B		3.90E-02	9.24E-06					5.73		2.12E-08			
CPP-37A		3.90E-02	9.24E-06					5.84		2.16E-08			
CPP-37B		3.90E-02	9.24E-06					5.96		2.20E-08			
CPP-37C		3.90E-02	9.24E-06					6.05		2.24E-08			
CPP-67A		3.90E-02	9.24E-06					7.69		2.84E-08			
CPP-67B		3.90E-02	9.24E-06					7.69		2.84E-08			
CPP-97		3.90E-02	9.24E-06					5.70		2.11E-08			
							max						
CPP-34A	Acenaphthene		0.00E+00	8.77E-06		NL		5.65		0.00E+00	2.12E-08		
CPP-34B			0.00E+00					5.73		0.00E+00			
CPP-37A			0.00E+00					5.84		0.00E+00			
CPP-37B			3.70E-02	8.77E-06				5.96		2.09E-08			
CPP-37C			3.70E-02	8.77E-06				6.05		2.12E-08			
CPP-67A			0.00E+00					7.69		0.00E+00			
CPP-67B			0.00E+00					7.69		0.00E+00			
CPP-97			0.00E+00					5.70		0.00E+00			
							max						
CPP-34A	Acetone		6.70E-01	1.59E-04	1.19E+02			5.65		3.59E-07	4.88E-07	8.90E+01	
CPP-34B			6.70E-01	1.59E-04				5.73		3.64E-07			
CPP-37A			6.70E-01	1.59E-04				5.84		3.71E-07			
CPP-37B			6.70E-01	1.59E-04				5.96		3.78E-07			
CPP-37C			6.70E-01	1.59E-04				6.05		3.84E-07			
CPP-67A			6.70E-01	1.59E-04				7.69		4.88E-07			
CPP-67B			6.70E-01	1.59E-04				7.69		4.88E-07			
CPP-97			6.70E-01	1.59E-04				5.70		3.62E-07			
							max						

Table A-4. (continued).

Site	State of Idaho Emission Limit (lb/hr)	Calculated acute emission rate (lb/hr)	Annual Average Concentration at Site Boundary ( $\mu\text{g}/\text{m}^3$ )	SCREEN3 Emission factor ( $\mu\text{g}/\text{m}^3/\text{lb}/\text{hr}$ )		
				Highway	Site Bound.	24-hour average Concentration at Highway ( $\mu\text{g}/\text{m}^3$ )
CPP-34A	Anthracene	0.00E+00	8.29E-05	NL	5.65	0.00E+00
CPP-34B		0.00E+00			5.73	0.00E+00
CPP-37A		0.00E+00			5.84	0.00E+00
CPP-37B		3.50E-01	8.29E-05		5.96	1.98E-07
CPP-37C		3.50E-01	8.29E-05		6.05	2.01E-07
CPP-67A		2.40E-01	5.69E-05		7.69	1.75E-07
CPP-67B		2.40E-01	5.69E-05		7.69	1.75E-07
CPP-97		0.00E+00			5.70	0.00E+00
CPP-34A	Atrochlor 1254 (C) <sup>a</sup>	0.00E+00	5.45E-05	6.60E-05	0.00E+00	5.52E-06
CPP-34B		0.00E+00			2.02	0.00E+00
CPP-37A		0.00E+00			2.04	0.00E+00
CPP-37B		2.30E-01	5.45E-05		2.05	0.00E+00
CPP-37C		2.30E-01	5.45E-05		2.07	9.63E-07
CPP-67A		0.00E+00			5.52E-06	1.43E-06
CPP-67B		0.00E+00			2.08	0.00E+00
CPP-97		0.00E+00			2.35	0.00E+00
CPP-34A	Atrochlor 1260 (C)	0.00E+00	9.95E-05	6.60E-05	0.00E+00	2.62E-06
CPP-34B		0.00E+00			2.02	0.00E+00
CPP-37A		0.00E+00			2.04	0.00E+00
CPP-37B		4.20E-01	9.95E-05		2.05	0.00E+00
CPP-37C		4.20E-01	9.95E-05		2.07	1.76E-06
CPP-67A		0.00E+00			2.08	2.62E-06
CPP-67B		0.00E+00			2.35	0.00E+00
CPP-97		0.00E+00			2.35	0.00E+00
CPP-34A	Benzene (C)	9.30E-01	2.20E-04	2.20E-04	8.00E-04	1.23E-05
CPP-34B		9.30E-01	2.20E-04		2.02	4.11E-06
CPP-37A		9.30E-01	2.20E-04		2.04	1.05E-06
CPP-37B		9.30E-01	2.20E-04		2.05	6.67E-07
CPP-37C		9.30E-01	2.20E-04		2.07	3.89E-06
CPP-67A		9.30E-01	2.20E-04		2.08	5.80E-06
CPP-67B		9.30E-01	2.20E-04		2.35	1.13E-05
CPP-97		9.30E-01	2.20E-04		2.35	1.13E-05
CPP-34A					2.03	1.00E-07

**ENGINEERING DESIGN FILE**

 EDF-3902  
 Rev. 0  
 Page 22 of 85

 431.02  
 01/30/2003  
 Rev. 11

Table A-4. (continued).

Site		mg/kg	Calculated acute emission rate (lb/hr)	State of Idaho Emission Limit (lb/hr)	SCREEN3 Emission factor (µg/m <sup>3</sup> /lb/hr)			Annual Average Concentration at Site Boundary (µg/m <sup>3</sup> )	AAC (µg/m <sup>3</sup> )
					Highway	Site Bound.	24-hour average Concentration at Highway (mg/m <sup>3</sup> )		
CPP-34A	Benzo(a)anthracene (C)	0.00E+00	1.47E-04	2.00E-06	0.00E+00	2.02	2.04	0.00E+00	7.54E-06
CPP-34B		0.00E+00		0.00E+00	0.00E+00			0.00E+00	3.00E-04
CPP-37A		0.00E+00			0.00E+00			0.00E+00	
CPP-37B		7.20E-02	1.71E-05		1.16E-06			0.00E+00	
CPP-37C		7.20E-02	1.71E-05		1.73E-06			3.01E-07	
CPP-67A		6.20E-01	1.47E-04		2.57E-05			4.49E-07	
CPP-67B		0.00E+00		0.00E+00	0.00E+00			7.54E-06	
CPP-97		0.00E+00		0.00E+00	0.00E+00			0.00E+00	
CPP-34A	Benzo(a)pyrene (C)	0.00E+00	8.29E-05	2.00E-06	0.00E+00	2.02	2.04	0.00E+00	4.25E-06
CPP-34B		0.00E+00		0.00E+00	0.00E+00			0.00E+00	3.00E-04
CPP-37A		0.00E+00			0.00E+00			0.00E+00	
CPP-37B				0.00E+00	0.00E+00			0.00E+00	
CPP-37C				0.00E+00	0.00E+00			0.00E+00	
CPP-67A		3.50E-01	8.29E-05		1.45E-05			4.25E-06	
CPP-67B		0.00E+00		0.00E+00	0.00E+00			0.00E+00	
CPP-97		0.00E+00		0.00E+00	0.00E+00			0.00E+00	
CPP-34A								5.35E-06	
CPP-34B	Benzo(b)fluoranthene (C)	0.00E+00	1.04E-04	2.00E-06	0.00E+00	2.02	2.04	0.00E+00	3.00E-04
CPP-37A		0.00E+00			0.00E+00			0.00E+00	
CPP-37B				0.00E+00	0.00E+00			0.00E+00	
CPP-37C				0.00E+00	0.00E+00			0.00E+00	
CPP-67A				0.00E+00	0.00E+00			0.00E+00	
CPP-67B		4.40E-01	1.04E-04		1.82E-05			5.35E-06	
CPP-97		0.00E+00		0.00E+00	0.00E+00			0.00E+00	
CPP-34A	bis (2-ethylhexyl) phthalate (C)	6.20E-01	1.47E-04	1.47E-04	2.80E-02	8.22E-06	2.02	2.08E-06	4.20E+00
CPP-34B		6.20E-01	1.47E-04			2.74E-06	2.04		6.99E-07
CPP-37A		0.00E+00				0.00E+00	2.05	0.00E+00	
CPP-37B		2.40E-01	5.69E-05			3.88E-06	2.07	1.00E-06	
CPP-37C		2.40E-01	5.69E-05			5.76E-06	2.08	1.50E-06	
CPP-67A		0.00E+00				0.00E+00	2.35	0.00E+00	
CPP-67B		0.00E+00				0.00E+00	2.35	0.00E+00	
CPP-97		0.00E+00				0.00E+00	2.03		

Table A-4. (continued).

Site		mg/kg	Calculated acute emission rate (lb/hr)		State of Idaho Emission Limit (lb/hr)	Calculated annual average emission rate (lb/hr)	SCREEN3 Emission factor ( $\mu\text{g}/\text{m}^3/\text{lb}/\text{hr}$ )			AAC ( $\text{mg}/\text{m}^3$ )	Annual Average Concentration at Site Boundary ( $\mu\text{g}/\text{m}^3$ )	AACC ( $\mu\text{g}/\text{m}^3$ )
							Highway	Site Bound.	24-hour average Concentration at Highway ( $\text{mg}/\text{m}^3$ )			
CPP-34A	Carbon Disulfide	6.60E-02	1.56E-05	1.56E-05	2.00E+00		5.65		3.53E-08	4.81E-08	1.50E+00	
CPP-34B		6.60E-02	1.56E-05				5.73		3.58E-08			
CPP-37A			0.00E+00				5.84		0.00E+00			
CPP-37B		6.60E-02	1.56E-05				5.96		3.73E-08			
CPP-37C		6.60E-02	1.56E-05				6.05		3.78E-08			
CPP-67A		6.60E-02	1.56E-05				7.69		4.81E-08			
CPP-67B		6.60E-02	1.56E-05				7.69		4.81E-08			
CPP-97		6.60E-02	1.56E-05				5.70		3.57E-08			
CPP-34A	Chrysene		0.00E+00	1.42E-04	NL	0.00E+00		5.65		0.00E+00	4.37E-07	
CPP-34B			0.00E+00			0.00E+00		5.73		0.00E+00		
CPP-37A			0.00E+00			0.00E+00		5.84		0.00E+00		
CPP-37B		1.10E-01	2.61E-05			1.78E-06		5.96		6.21E-08		
CPP-37C		1.10E-01	2.61E-05			2.64E-06		6.05		6.31E-08		
CPP-67A		6.00E-01	1.42E-04			2.48E-05		7.69		4.37E-07		Risk = 2.29E-12
CPP-67B		6.00E-01	1.42E-04			2.48E-05		7.69		4.37E-07		
CPP-97			0.00E+00			0.00E+00		5.70		0.00E+00		
								max	4.37E-07			
CPP-34A	Fluoranthene		0.00E+00	3.55E-04	NL			5.65		0.00E+00	1.09E-06	
CPP-34B			0.00E+00					5.73		0.00E+00		
CPP-37A			0.00E+00					5.84		0.00E+00		
CPP-37B		2.20E-01	5.21E-05					5.96		1.24E-07		
CPP-37C		2.20E-01	5.21E-05					6.05		1.26E-07		
CPP-67A		1.50E+00	3.55E-04					7.69		1.09E-06		
CPP-67B		1.50E+00	3.55E-04					7.69		1.09E-06		
CPP-97			0.00E+00					5.70		0.00E+00		
CPP-34A	Fluorene		0.00E+00	1.45E-05	1.33E-01			5.65		0.00E+00	3.50E-08	1.00E-01
CPP-34B			0.00E+00					5.73		0.00E+00		
CPP-37A			0.00E+00					5.84		0.00E+00		
CPP-37B		6.10E-02	1.45E-05					5.96		3.45E-08		
CPP-37C		6.10E-02	1.45E-05					6.05		3.50E-08		
CPP-67A			0.00E+00					7.69		0.00E+00		
CPP-67B			0.00E+00					7.69		0.00E+00		
CPP-97			0.00E+00					5.70		0.00E+00		
								max	3.50E-08			

## ENGINEERING DESIGN FILE

EDF-3902  
Rev. 0  
Page 24 of 85

431.02  
01/30/2003  
Rev. 11

Table A-4. (continued).

Site		mg/kg	Calculated acute emission rate (lb/hr)	State of Idaho Emission Limit (lb/hr)	SCREEN3 Emission factor ( $\mu\text{g}/\text{m}^3/\text{lb/hr}$ )				Annual Average Concentration at Site Boundary ( $\mu\text{g}/\text{m}^3$ )	AAAC ( $\mu\text{g}/\text{m}^3$ )
					Highway	Site Bound.	24-hour average Concentration at Highway ( $\text{mg}/\text{m}^3$ )	AAC ( $\text{mg}/\text{m}^3$ )		
CPP-34A	Kepone	0.00E+00	9.48E-05	NL		5.65	0.00E+00	2.29E-07		
CPP-34B		0.00E+00				5.73	0.00E+00			
CPP-37A		0.00E+00				5.84	0.00E+00			
CPP-37B		4.00E-01	9.48E-05			5.96	2.26E-07			
CPP-37C		4.00E-01	9.48E-05			6.05	2.29E-07			
CPP-67A		0.00E+00				7.69	0.00E+00			
CPP-67B		0.00E+00				7.69	0.00E+00			
CPP-97		0.00E+00				5.70	0.00E+00			
					max	2.29E-07				
CPP-34A	Methylene Chloride (C)	0.00E+00	6.87E-05	1.60E-03	0.00E+00		2.02			
CPP-34B		0.00E+00			0.00E+00		2.04			
CPP-37A		3.32E-05			3.92E-07		2.05			
CPP-37B		2.90E-01	6.87E-05		4.69E-06		2.07			
CPP-37C		2.90E-01	6.87E-05		6.95E-06		2.08			
CPP-67A		1.10E-02	2.61E-06		4.55E-07		2.35			
CPP-67B		1.10E-02	2.61E-06		4.55E-07		2.35			
CPP-97		0.00E+00			0.00E+00		2.03			
CPP-34A	Phenanthrene	0.00E+00	1.92E-04	NL		5.65	0.00E+00	5.90E-07		
CPP-34B		0.00E+00				5.73	0.00E+00			
CPP-37A		0.00E+00				5.84	0.00E+00			
CPP-37B		4.00E-01	9.48E-05			5.96	2.26E-07			
CPP-37C		4.00E-01	9.48E-05			6.05	2.29E-07			
CPP-67A		8.10E-01	1.92E-04			7.69	5.90E-07			
CPP-67B		8.10E-01	1.92E-04			7.69	5.90E-07			
CPP-97		0.00E+00				5.70	0.00E+00			
					max	5.90E-07				
CPP-34A	Pyrene	0.00E+00	4.98E-05			5.65	0.00E+00	1.20E-07		
CPP-34B		0.00E+00				5.73	0.00E+00			
CPP-37A		0.00E+00				5.84	0.00E+00			
CPP-37B		2.10E-01	4.98E-05			5.96	1.19E-07			
CPP-37C		2.10E-01	4.98E-05			6.05	1.20E-07			
CPP-67A		0.00E+00				7.69	0.00E+00			
CPP-67B		0.00E+00				7.69	0.00E+00			
CPP-97		0.00E+00				5.70	0.00E+00			
					max	1.20E-07				

Table A-4. (continued)

Site		mg/kg	Calculated acute emission rate (lb/hr)		State of Idaho Emission Limit (lb/hr)	Calculated annual average emission rate (lb/hr)		SCREEN3 Emission factor ( $\mu\text{g}/\text{m}^3/\text{lb}/\text{hr}$ )			AAC ( $\text{mg}/\text{m}^3$ )	Annual Average Concentration at Site Boundary ( $\mu\text{g}/\text{m}^3$ )		
								Highway	Site Bound.	24-hour average Concentration at Highway ( $\text{mg}/\text{m}^3$ )				
CPP-34A	Tetrachloroethene (C)	9.00E-03	2.13E-06	2.13E-06		1.19E-07		5.65	2.02	1.20E-05	1.64E-05		3.01E-08	1.09E-07
CPP-34B			0.00E+00			0.00E+00		5.73	2.04	0.00E+00			0.00E+00	
CPP-37A		9.00E-03	2.13E-06			2.52E-08		5.84	2.05	1.25E-05			6.46E-09	
CPP-37B		9.00E-03	2.13E-06			1.46E-07		5.96	2.07	1.27E-05			3.77E-08	
CPP-37C		9.00E-03	2.13E-06			2.16E-07		6.05	2.08	1.29E-05			5.61E-08	
CPP-67A		9.00E-03	2.13E-06			3.72E-07		7.69	2.35	1.64E-05			1.09E-07	
CPP-67B		9.00E-03	2.13E-06			3.72E-07		7.69	2.35	1.64E-05			1.09E-07	
CPP-97		9.00E-03	2.13E-06			3.81E-09		5.70	2.03	1.22E-05			9.67E-10	
CPP-34A	Toluene	1.30E+00	3.08E-04	3.08E-04	2.50E+01			5.65		6.96E-07	9.48E-07	1.88E+01		
CPP-34B		1.30E+00	3.08E-04					5.73		7.06E-07				
CPP-37A		1.00E-03	2.37E-07					5.84		5.54E-10				
CPP-37B		1.30E+00	3.08E-04					5.96		7.34E-07				
CPP-37C		1.30E+00	3.08E-04					6.05		7.45E-07				
CPP-67A		1.30E+00	3.08E-04					7.69		9.48E-07				
CPP-67B		1.30E+00	3.08E-04					7.69		9.48E-07				
CPP-97		1.30E+00	3.08E-04					5.70		7.02E-07				
									max	9.48E-07				
CPP-34A	Tributylphosphate	4.60E-01	1.09E-04	1.09E-04	1.47E-01			5.65		2.46E-07	3.35E-07	1.10E-01		
CPP-34B		4.60E-01	1.09E-04					5.73		2.50E-07				
CPP-37A		4.60E-01	1.09E-04					5.84		2.55E-07				
CPP-37B		4.60E-01	1.09E-04					5.96		2.60E-07				
CPP-37C		4.60E-01	1.09E-04					6.05		2.64E-07				
CPP-67A		4.60E-01	1.09E-04					7.69		3.35E-07				
CPP-67B		4.60E-01	1.09E-04					7.69		3.35E-07				
CPP-97		4.60E-01	1.09E-04					5.70		2.49E-07				
CPP-34A	Trichloroethene (C)	9.60E-02	2.27E-05	2.27E-05		1.27E-06			2.02				3.21E-07	1.17E-06
CPP-34B		9.60E-02	2.27E-05			4.25E-07			2.04				1.08E-07	
CPP-37A		9.60E-02	2.27E-05			2.69E-07			2.05				6.89E-08	
CPP-37B		9.60E-02	2.27E-05			1.55E-06			2.07				4.02E-07	
CPP-37C		9.60E-02	2.27E-05			2.30E-06			2.08				5.99E-07	
CPP-67A		9.60E-02	2.27E-05			3.97E-06			2.35				1.17E-06	
CPP-67B		9.60E-02	2.27E-05			3.97E-06			2.35				1.17E-06	
CPP-97		9.60E-02	2.27E-05			4.07E-08			2.03				1.03E-08	

Table A-4. (continued).

Site		mg/kg	Calculated acute emission rate (lb/hr)		State of Idaho Emission Limit (lb/hr)	Calculated annual average emission rate (lb/hr)	SCREEN3 Emission factor ( $\mu\text{g}/\text{m}^3/\text{lb}/\text{hr}$ )			AAC ( $\text{mg}/\text{m}^3$ )	Annual Average Concentration at Site Boundary ( $\mu\text{g}/\text{m}^3$ )	AACC ( $\mu\text{g}/\text{m}^3$ )
							Highway	Site Bound.	24-hour average Concentration at Highway ( $\text{mg}/\text{m}^3$ )			
CPP-34A	Xylene (ortho)	5.00E-03	1.18E-06	1.18E-06	2.90E+01		5.65		2.68E-09	3.64E-09	2.18E+01	
CPP-34B		5.00E-03	1.18E-06				5.73		2.72E-09			
CPP-37A		5.00E-03	1.18E-06				5.84		2.77E-09			
CPP-37B		5.00E-03	1.18E-06				5.96		2.82E-09			
CPP-37C		5.00E-03	1.18E-06				6.05		2.87E-09			
CPP-67A		5.00E-03	1.18E-06				7.69		3.64E-09			
CPP-67B		5.00E-03	1.18E-06				7.69		3.64E-09			
CPP-97		5.00E-03	1.18E-06				5.70		2.70E-09			
CPP-34A	Xylene (total)	3.70E+00	8.77E-04	8.77E-04	2.90E+01		5.65		1.98E-06	2.70E-06	2.18E+01	
CPP-34B		3.70E+00	8.77E-04				5.73		2.01E-06			
CPP-37A		3.70E+00	8.77E-04				5.84		2.05E-06			
CPP-37B		3.70E+00	8.77E-04				5.96		2.09E-06			
CPP-37C		3.70E+00	8.77E-04				6.05		2.12E-06			
CPP-67A		3.70E+00	8.77E-04				7.69		2.70E-06			
CPP-67B		3.70E+00	8.77E-04				7.69		2.70E-06			
CPP-97		3.70E+00	8.77E-04				5.70		2.00E-06			

a. "(C)" means compound is a carcinogen.

NL = no limit listed for this contaminant.

**Appendix B**  
**SCREEN3 Code Output Files**

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BEE-Line SCREEN3 Version 3.20

06/06/03  
10:36:01

Input File: CPP03.DTA  
Output File: CPP03.LST

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

**WAG 3 SOILS - SITE CPP-03**

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	AREA
EMISSION RATE (G/(S-M**2))	=	.201460E-03
SOURCE HEIGHT (M)	=	.0000
LENGTH OF LARGER SIDE (M)	=	46.6344
LENGTH OF SMALLER SIDE (M)	=	13.4112
RECEPTOR HEIGHT (M)	=	1.5240
URBAN/RURAL OPTION	=	RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .000 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN DISCRETE DISTANCES \*\*\*  
\*\*\*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
5310.	7.391	6	1.0	1.0	10000.0	.00	0.
13000.	2.260	6	1.0	1.0	10000.0	.00	0.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	7.391	5310.	0.

431.02  
01/30/2003  
Rev. 11

# ENGINEERING DESIGN FILE

EDF-3902  
Rev. 0  
Page 30 of 85

BEE-Line SCREEN3 Version 3.20

06/04/03  
10:26:11

Input File: CPP34A.DTA  
Output File: CPP34A.LST

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

## WAG 3 SOILS - SITE CPP-34A

### SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	AREA
EMISSION RATE (G/(S-M**2))	=	.467020E-03
SOURCE HEIGHT (M)	=	.0000
LENGTH OF LARGER SIDE (M)	=	40.2336
LENGTH OF SMALLER SIDE (M)	=	6.7056
RECEPTOR HEIGHT (M)	=	1.5240
URBAN/RURAL OPTION	=	RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .000 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN DISCRETE DISTANCES \*\*\*  
\*\*\*\*\*

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
6470.	5.648	6	1.0	1.0 10000.0	.00	0.
14160.	2.022	6	1.0	1.0 10000.0	.00	0.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	5.648	6470.	0.

431.02  
01/30/2003  
Rev. 11

# ENGINEERING DESIGN FILE

EDF-3902  
Rev. 0  
Page 31 of 85

BEE-Line SCREEN3 Version 3.20

06/04/03  
10:27:57

Input File: CPP34B.DTA  
Output File: CPP34B.LST

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

## WAG 3 SOILS - SITE CPP-34B

### SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	AREA
EMISSION RATE (G/(S-M**2))	=	.168895E-02
SOURCE HEIGHT (M)	=	.0000
LENGTH OF LARGER SIDE (M)	=	22.2504
LENGTH OF SMALLER SIDE (M)	=	3.3528
RECEPTOR HEIGHT (M)	=	1.5240
URBAN/RURAL OPTION	=	RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .000 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN DISCRETE DISTANCES \*\*\*  
\*\*\*\*\*

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
6400.	5.732	6	1.0	1.0 10000.0	.00	0.
14090.	2.035	6	1.0	1.0 10000.0	.00	0.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	5.732	6400.	0.

BEE-Line SCREEN3 Version 3.20

06/06/03  
10:38:06

Input File: CPP37A.DTA  
Output File: CPP37A.LST

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

**WAG 3 SOILS - SITE CPP-37A**

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	AREA
EMISSION RATE (G/(S-M**2))	=	.289420E-03
SOURCE HEIGHT (M)	=	.0000
LENGTH OF LARGER SIDE (M)	=	21.6408
LENGTH OF SMALLER SIDE (M)	=	20.1168
RECEPTOR HEIGHT (M)	=	1.5240
URBAN/RURAL OPTION	=	RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .000 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN DISCRETE DISTANCES \*\*\*  
\*\*\*\*\*

DIST (M)	CONC (UG/M**3)	U10M STAB	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
6310.	5.843	6	1.0	1.0 10000.0	.00	41.
14000.	2.052	6	1.0	1.0 10000.0	.00	37.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	5.843	6310.	0.

BEE-Line SCREEN3 Version 3.20

06/06/03  
10:39:04

Input File: CPP37B.DTA  
Output File: CPP37B.LST

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

**WAG 3 SOILS - SITE CPP-37B**

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	AREA
EMISSION RATE (G/(S-M**2))	=	.110840E-03
SOURCE HEIGHT (M)	=	.0000
LENGTH OF LARGER SIDE (M)	=	40.5384
LENGTH OF SMALLER SIDE (M)	=	28.0416
RECEPTOR HEIGHT (M)	=	1.5240
URBAN/RURAL OPTION	=	RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .000 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN DISCRETE DISTANCES \*\*\*  
\*\*\*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
6220.	5.959	6	1.0	1.0	10000.0	.00	0.
13910.	2.070	6	1.0	1.0	10000.0	.00	0.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	5.959	6220.	0.

BEE-Line SCREEN3 Version 3.20

06/06/03  
10:40:18

Input File: CPP37C.DTA  
Output File: CPP37C.LST

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

**WAG 3 SOILS - SITE CPP-37C**

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	AREA
EMISSION RATE (G/(S-M**2))	=	.747490E-04
SOURCE HEIGHT (M)	=	.0000
LENGTH OF LARGER SIDE (M)	=	43.8912
LENGTH OF SMALLER SIDE (M)	=	38.4048
RECEPTOR HEIGHT (M)	=	1.5240
URBAN/RURAL OPTION	=	RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .000 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN DISCRETE DISTANCES \*\*\*  
\*\*\*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
6150.	6.047	6	1.0	1.0	10000.0	.00	3.
13840.	2.083	6	1.0	1.0	10000.0	.00	1.

\*\*\*\*\*

\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*

\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	6.047	6150.	0.

431.02  
01/30/2003  
Rev. 11

# ENGINEERING DESIGN FILE

EDF-3902  
Rev. 0  
Page 35 of 85

BEE-Line SCREEN3 Version 3.20

06/04/03  
10:33:34

Input File: CPP67A.DTA  
Output File: CPP67A.LST

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

## WAG 3 SOILS - SITE CPP-67A

### SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	AREA
EMISSION RATE (G/ (S-M**2))	=	.587020E-04
SOURCE HEIGHT (M)	=	.0000
LENGTH OF LARGER SIDE (M)	=	46.3296
LENGTH OF SMALLER SIDE (M)	=	46.3296
RECEPTOR HEIGHT (M)	=	1.5240
URBAN/RURAL OPTION	=	RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .000 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN DISCRETE DISTANCES \*\*\*  
\*\*\*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
5150.	7.687	6	1.0	1.0	10000.0	.00	37.
12600.	2.354	6	1.0	1.0	10000.0	.00	41.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	7.687	5150.	0.

431.02  
01/30/2003  
Rev. 11

# ENGINEERING DESIGN FILE

EDF-3902  
Rev. 0  
Page 36 of 85

BEE-Line SCREEN3 Version 3.20

06/04/03  
10:35:08

Input File: CPP67B.DTA  
Output File: CPP67B.LST

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

## WAG 3 SOILS - SITE CPP-67B

### SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	AREA
EMISSION RATE (G/(S-M**2))	=	.743150E-04
SOURCE HEIGHT (M)	=	.0000
LENGTH OF LARGER SIDE (M)	=	44.5008
LENGTH OF SMALLER SIDE (M)	=	38.1000
RECEPTOR HEIGHT (M)	=	1.5240
URBAN/RURAL OPTION	=	RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .000 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN DISCRETE DISTANCES \*\*\*  
\*\*\*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
5150.	7.694	6	1.0	1.0	10000.0	.00	13.
12600.	2.354	6	1.0	1.0	10000.0	.00	11.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	7.694	5150.	0.

BEE-Line SCREEN3 Version 3.20

06/04/03  
10:36:04

Input File: CPP97.DTA  
Output File: CPP97.LST

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

**WAG 3 SOILS - SITE CPP-97**

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	AREA
EMISSION RATE (G/(S-M**2))	=	.270490E-03
SOURCE HEIGHT (M)	=	.0000
LENGTH OF LARGER SIDE (M)	=	33.2232
LENGTH OF SMALLER SIDE (M)	=	14.0208
RECEPTOR HEIGHT (M)	=	1.5240
URBAN/RURAL OPTION	=	RURAL

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

MODEL ESTIMATES DIRECTION TO MAX CONCENTRATION

BUOY. FLUX = .000 M\*\*4/S\*\*3; MOM. FLUX = .000 M\*\*4/S\*\*2.

\*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN DISCRETE DISTANCES \*\*\*  
\*\*\*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	MAX DIR (DEG)
6430.	5.696	6	1.0	1.0	10000.0	.00	0.
14120.	2.030	6	1.0	1.0	10000.0	.00	0.

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	5.696	6430.	0.

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**Appendix C**  
**CAP-88 Code Output File**

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431.02  
01/30/2003  
Rev. 11

# ENGINEERING DESIGN FILE

EDF-3902  
Rev. 0  
Page 41 of 85

LINTEL IMPLEMENTATION OF THE CAP88 COMPUTER CODE SYSTEM

THE DATE AND TIME ARE: Thu Jun 19 11:28:18 MDT 2003  
USER NAME: Chris Staley  
USER ID: cst  
THE UNIX ABSOLUTE PATH FOR THIS RUN IS: /export/home/fierbolt3/cst/2003/wag3

THE FILES USED BY THIS RUN ARE:

Owner-Id	Date	Time	File Name
CAP88 OUTPUT FILE: cst	Jun 19	11:28	/export/home/fierbolt3/cst/2003/wag3/wag3soils.cap
PREPAR FILE: cst	Jun 19	11:28	/export/home/fierbolt3/cst/2003/wag3/wag3soils.dat
DARTAB FILE: cst	Jun 5	15:05	inddar.dat
WIND FILE: pdr	Oct 1	1997	/export/home/fierbolt3/pdr/10ywind/GRDLO.STR
FARM FILE: pdr	Mar 8	1995	/export/home/fierbolt3/pdr/cary_smith_cap88/farm/cowveg2.dat
POPULATION FILE: pdr	Mar 8	1995	/export/home/fierbolt3/pdr/cary_smith_cap88/pop/nrf.90
ALLRAD DATA BASE: pdr	Jan 30	1995	/export/home/fierbolt3/pdr/cary_smith_cap88/radrisk/allrad88.dat
RADRISK DATA BASE: pdr	Mar 22	2001	/export/home/fierbolt3/pdr/cary_smith_cap88/radrisk/rad.new

PREPARED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

REVIEWED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

1 ALLRAD FILE ==> ALLRAD88 CONTAINS THE DCFs  
POP FILE ==> CONTAINS THE POPULATION GRID  
1 SYNOPSIS REPORT - CAP-88 (1.00)

ID Code: Date/Time: Thu Jun 19 11:28:16 2003

FACILITY: IDAHO NATIONAL ENGINEERING & ENVIRONMENTAL LABORATORY  
ADDRESS: BECHTEL BWXT, LLC APPLIED GEOSCIENCES DEPARTMENT  
CITY: IDAHO FALLS  
State: ID Zipcode: 83415-2107

Source Category: WAG 3 SOILS REMEDIATION RELEASES Source Term: 2003

Comments:

WAG 3 SOILS REMEDIATION AT INTEC  
SITES CPP-03; -34A&B; -37A,B,C; -67A&B; -97

INDIVIDUAL AT MAXIMUM RISK ASSESSMENT  
(RN-222 RISKS EXCLUDED)

Location to the individual: 13900 METERS SOUTH SOUTHWEST

GONADS	BREAST	R MAR	LUNGS	THYROID	ENDOST	RMNDR
ORGAN DOSE (MREM/YR): 1.0E-02	8.3E-03	5.2E-02	3.5E-02	8.7E-03	2.2E-01	1.5E-02

ICRP Effective Dose Equivalent (mrem/yr): 2.55E-02  
Lifetime Fatal Cancer Risk : 3.82E-07

Stack #1  
SOURCE TERM (2003)

Stack #1  
Nuclide Class Amad Ci/yr TOTAL

AM-241	W	1.00	3.95E-04	3.95E-04
CE-144	Y	1.00	2.47E-08	2.47E-08
CO-58	Y	1.00	3.95E-20	3.95E-20
CO-60	Y	1.00	5.60E-05	5.60E-05
CS-134	D	1.00	1.02E-05	1.02E-05
CS-137	D	1.00	6.83E-02	6.83E-02
BA-137M	D	1.00	6.83E-02	6.83E-02
NP-237	W	1.00	2.66E-04	2.66E-04
PU-238	Y	1.00	7.22E-04	7.22E-04
RU-103	Y	1.00	1.38E-32	1.38E-32
RU-106	Y	1.00	5.27E-07	5.27E-07
RH-106	Y	1.00	5.27E-07	5.27E-07
SB-125	W	1.00	1.65E-05	1.65E-05
TE-125M	W	1.00	4.13E-06	4.13E-06
SR-90	D	1.00	9.97E-02	9.97E-02
Y-90	Y	1.00	9.97E-02	9.97E-02
TC-99	W	1.00	2.87E-06	2.87E-06
U-234	Y	1.00	4.53E-04	4.53E-04
U-238	Y	1.00	5.25E-04	5.25E-04

SITE INFORMATION

Temperature: 6 C  
Rainfall: 21 cm/yr  
Mixing Height: 800 meters

1

ID CODE: 10000000000000000000000000 DATE/TIME: Thu Jun 19 11:28:16 2003

PAGE 2

EMISSION INFORMATION

Stack Number: 1  
-----  
STACK HEIGHT (METERS) : .00  
STACK DIAMETER (METERS): 30.00  
PLUME RISE  
MOMENTUM (M/SEC) : .00E+00

FOOD SUPPLY FRACTIONS

	LOCAL	REGIONAL	IMPORTED
Vegetable:	.700	.300	.000
Meat:	.442	.558	.000
Milk:	.399	.601	.000

FOOD ARRAYS WERE NOT GENERATED OR SUPPLIED FOR THIS RUN . DEFAULT VALUES USED.

DISTANCES USED FOR MAXIMUM INDIVIDUAL ASSESSMENT

13900

REFERENCE FILE NAMES FOR ASSESSMENT

STARFILE ==> INEEL MESONET DATA  
RADRISK FILE ==> EPA  
1 DATE Thu Jun 19 11:28:16 2003  
0 MAIN OPTIONS:  
0 CONCEN AND DOSEN OPTION(1)=0  
0 CIRCULAR GRID OPTION(2)=1  
0 CONCEN OPTIONS:  
0 SECTOR-AVERAGED OPTION(3)=0  
0 MOMENTUM-TYPE PLUME OPTION(4)=1  
0 FIXED DEPOSITION VELOCITY OPTION(5)=0  
0 NO PUNCH, CONCEN OPTION(6)=0  
0 POINT SOURCE OPTION(7)=0  
0 NO PRINT CONCEN MAIN TABLE OPTION(8)=1  
0 PRINT CONCEN CHI/Q TABLES OPTION(9)=0

0 DOSEN OPTIONS:  
0 INDIVIDUAL ASSESSMENT LIPO=0  
0 NO PRINT DOSEN TABLES NNTB=0  
0 NO PUNCH DOSES NRTB=0  
0 NO DARTAB OUTPUT NSTB=0  
0 PRINT DOSE SUMMARY NTTB=1  
0 NO RN-222 WORKING LEVELS NUTB=0  
0 READ ORGAN NAMES NVTB=1  
0 BUILDUP TIME IN SOIL TSUBB= 100.0 YEARS  
T=3.6524E+04 DAYS  
1 DATE Thu Jun 19 11:28:16 2003  
0 GRID DATA:  
0 BOUNDS OF DIRECTION-INDICES NOL= 8 NOU= 8  
0 BOUNDS OF DISTANCE-INDICES NRL= 1 NRU= 1  
0 SQSD=1390.0 (M), COMPUTED FROM IDIST( 1)=13900 (M)  
0 IDIST, THE ARRAY OF RADIAL DISTANCES (M)  
13900  
1 DATE Thu Jun 19 11:28:16 2003  
0 NUMBER OF SOURCES NUMST=1  
0 NUMBER OF NUCLIDES NNUCS=19  
0 SOURCE #: 1  
  
HEIGHT PH=.0  
DIAMETER DIA= 30.00  
EXIT VELOCITY VEL= 0.  
HEAT RELEASE RATE QH= 0.  
NUCLIDE RELEASE RATE, REL (CI/YR)  
  
1 AM-241 3.9500E-04  
2 CE-144 2.4700E-08  
3 CO-58 3.9500E-20  
4 CO-60 5.6000E-05  
5 CS-134 1.0200E-05  
6 CS-137 6.8300E-02  
7 BA-137M 6.8300E-02  
8 NP-237 2.6600E-04  
9 PU-238 7.2200E-04  
10 RU-103 1.3800E-32  
11 RU-106 5.2700E-07  
12 RH-106 5.2700E-07  
13 SB-125 1.6500E-05  
14 TE-125M 4.1300E-06  
15 SR-90 9.9700E-02  
16 Y-90 9.9700E-02  
17 TC-99 2.8700E-06  
18 U-234 4.5300E-04  
19 U-238 5.2500E-04  
1 DATE Thu Jun 19 11:28:16 2003  
0 INDEX NAME ISOL LAMSUR UPTAKE AMAD  
CLASS 1/D FLING MICRONS  
  
1 AM-241 W 5.48E-05 .00 1.00  
2 CE-144 Y 5.48E-05 .00 1.00  
3 CO-58 Y 5.48E-05 .30 1.00  
4 CO-60 Y 5.48E-05 .30 1.00  
5 CS-134 D 5.48E-05 .95 1.00  
6 CS-137 D 5.48E-05 .95 1.00  
7 BA-137M D 5.48E-05 .10 1.00  
8 NP-237 W 5.48E-05 .00 1.00  
9 PU-238 Y 5.48E-05 .00 1.00  
10 RU-103 Y 5.48E-05 .05 1.00  
11 RU-106 Y 5.48E-05 .05 1.00  
12 RH-106 Y 5.48E-05 .05 1.00  
13 SB-125 W 5.48E-05 .10 1.00  
14 TE-125M W 5.48E-05 .20 1.00  
15 SR-90 D 5.48E-05 .30 1.00  
16 Y-90 Y 5.48E-05 .00 1.00  
17 TC-99 W 5.48E-05 .80 1.00  
18 U-234 Y 5.48E-05 .20 1.00  
19 U-238 Y 5.48E-05 .20 1.00

INDEX	NAME	SC	VD	VG	ANLAM
-------	------	----	----	----	-------

		1/S	M/S	M/S	1/D
1	AM-241	2.08E-06	1.80E-03	3.55E-05	4.39E-06
2	CB-144	2.08E-06	1.80E-03	3.55E-05	2.44E-03
3	CO-58	2.08E-06	1.80E-03	3.55E-05	9.79E-03
4	CO-60	2.08E-06	1.80E-03	3.55E-05	3.60E-04
5	CS-134	2.08E-06	1.80E-03	3.55E-05	9.20E-04
6	CS-137	2.08E-06	1.80E-03	3.55E-05	6.29E-05
7	BA-137M	2.08E-06	1.80E-03	3.55E-05	6.29E-05
8	NP-237	2.08E-06	1.80E-03	3.55E-05	8.87E-10
9	PU-238	2.08E-06	1.80E-03	3.55E-05	2.16E-05
10	RU-103	2.08E-06	1.80E-03	3.55E-05	1.76E-02
11	RU-106	2.08E-06	1.80E-03	3.55E-05	1.88E-03
12	RH-106	2.08E-06	1.80E-03	3.55E-05	1.88E-03
13	SB-125	2.08E-06	1.80E-03	3.55E-05	6.85E-04
14	TE-125M	2.08E-06	1.80E-03	3.55E-05	6.85E-04
15	SR-90	2.08E-06	1.80E-03	3.55E-05	6.64E-05
16	Y-90	2.08E-06	1.80E-03	3.55E-05	6.64E-05
17	TC-99	2.08E-06	1.80E-03	3.55E-05	8.91E-09
18	U-234	2.08E-06	1.80E-03	3.55E-05	7.76E-09
19	U-238	2.08E-06	1.80E-03	3.55E-05	4.25E-13

0 \*\*\*NOTE: VG SET TO ZERO FOR AIRDOS UNLESS GREATER THAN 1.000E-02

0 \*\*\*NOTE: ANLAM SET TO ZERO FOR AIRDOS UNLESS GREATER THAN 1.000E-02

1 DATE Thu Jun 19 11:28:16 2003

0 FOR EACH STABILITY CLASS

A	B	C	D	E	F	G	PERD
0UDCAT, HARMONIC AVERAGE WIND SPEEDS ( WIND TOWARDS )							
N	1.517	2.443	2.796	3.417	2.300	1.261	.000 .051
NNW	1.403	2.101	2.623	3.271	2.300	1.207	.000 .031
NW	1.306	1.713	2.661	3.115	2.295	1.089	.000 .018
WNW	1.282	1.896	2.596	2.524	2.054	1.121	.000 .016
W	1.296	2.147	2.270	2.722	2.156	1.096	.000 .019
WSW	1.325	2.204	2.331	3.271	2.355	1.179	.000 .045
SW	1.313	1.812	2.215	3.221	2.333	1.213	.000 .108
SSW	1.195	1.804	2.068	2.799	2.129	1.185	.000 .112
S	1.101	1.916	2.133	2.727	1.881	1.164	.000 .073
SSE	1.140	2.288	3.159	2.720	1.433	1.059	.000 .036
SE	1.215	2.568	3.041	2.345	1.339	1.052	.000 .023
ESE	1.211	2.563	3.323	3.024	1.497	1.066	.000 .024
E	1.334	2.599	3.838	3.469	1.888	1.117	.000 .036
ENE	1.380	2.580	3.571	4.826	2.410	1.198	.000 .108
NE	1.567	2.891	3.592	5.305	2.624	1.299	.000 .194
NNE	1.577	2.754	3.476	4.263	2.343	1.332	.000 .105

0UDAV, ARITHMETIC AVERAGE WIND SPEEDS ( WIND TOWARDS )

N	2.035	3.056	3.609	4.638	2.975	1.769	.000
NNW	1.930	2.888	3.545	4.478	2.969	1.699	.000
NW	1.824	2.661	3.635	4.243	2.936	1.521	.000
WNW	1.796	2.776	3.597	3.452	2.572	1.573	.000
W	1.812	2.809	3.190	3.758	2.900	1.533	.000
WSW	1.846	2.780	3.218	4.479	3.205	1.660	.000
SW	1.832	2.493	2.959	4.194	3.092	1.708	.000
SSW	1.683	2.528	2.859	3.839	2.783	1.669	.000
S	1.542	2.765	3.241	4.284	2.635	1.639	.000
SSE	1.603	3.070	4.142	4.784	2.167	1.470	.000
SE	1.710	3.385	4.134	4.177	2.061	1.457	.000
ESE	1.704	3.351	4.243	5.029	2.234	1.482	.000
E	1.856	3.253	4.395	5.164	2.692	1.567	.000
ENE	1.906	3.175	4.286	6.656	3.208	1.687	.000
NE	2.077	3.342	4.212	6.886	3.392	1.816	.000
NNE	2.086	3.269	4.137	5.465	3.100	1.853	.000

1 DATE Thu Jun 19 11:28:16 2003

0 FOR EACH STABILITY CLASS

A	B	C	D	E	F	G	
0FRRAW, FREQUENCIES OF STABILITY CLASSES ( WIND TOWARDS )							
N	1.81E-01	7.36E-02	7.21E-02	3.15E-01	1.27E-01	2.31E-01	.00E+00
NNW	2.42E-01	6.07E-02	7.01E-02	2.54E-01	1.31E-01	2.43E-01	.00E+00
NW	3.26E-01	4.46E-02	4.62E-02	1.52E-01	1.09E-01	3.23E-01	.00E+00
WNW	3.85E-01	3.91E-02	3.97E-02	1.12E-01	6.25E-02	3.52E-01	.00E+00
W	3.31E-01	5.22E-02	3.69E-02	1.76E-01	8.70E-02	3.17E-01	.00E+00
WSW	1.78E-01	5.85E-02	7.04E-02	3.58E-01	1.44E-01	1.91E-01	.00E+00
SW	7.75E-02	4.63E-02	8.50E-02	5.41E-01	1.39E-01	1.10E-01	.00E+00
SSW	6.05E-02	3.26E-02	6.28E-02	5.00E-01	1.92E-01	1.52E-01	.00E+00
S	6.81E-02	2.17E-02	3.80E-02	4.26E-01	2.35E-01	2.11E-01	.00E+00
SSE	1.09E-01	2.91E-02	3.71E-02	2.95E-01	1.70E-01	3.51E-01	.00E+00

SE 1.54E-01 3.59E-02 4.29E-02 1.31E-01 9.09E-02 5.45E-01 .00E+00  
ESE 1.39E-01 3.11E-02 4.91E-02 2.08E-01 9.82E-02 4.74E-01 .00E+00  
E 9.80E-02 3.27E-02 4.86E-02 3.63E-01 1.37E-01 3.21E-01 .00E+00  
ENE 4.72E-02 2.25E-02 4.41E-02 5.99E-01 1.54E-01 1.34E-01 .00E+00  
NE 3.64E-02 2.41E-02 5.46E-02 6.81E-01 1.18E-01 8.58E-02 .00E+00  
NNE 8.20E-02 5.09E-02 8.12E-02 4.95E-01 1.38E-01 1.53E-01 .00E+00  
TOT 9.83E-02 3.72E-02 5.94E-02 4.75E-01 1.45E-01 1.86E-01 .00E+00

0 HEIGHT OF LID

LIDAI= 800 (M)

0 RAINFALL RATE

RR= 20.8 (CM/Y)

0 AVERAGE AIR TEMPERATURE

0 TA= 5.8 (DEG C) 279.0 (K)

0 SURFACE ROUGHNESS LENGTH

Z0= .010 (M)

0 HEIGHT OF WIND MEASUREMENTS

Z= 10.0 (M)

0 AVERAGE WIND SPEED

UBAR= 3.84 (M/S)

0 VERTICAL TEMPERATURE GRADIENTS: (TG) (K/M)

STABILITY E .073

STABILITY F .109

STABILITY G .145

1 DATE Thu Jun 19 11:28:16 2003

0STAR INPUT, WIND FREQUENCIES ( WIND FROM )

OCLASS: A

N	2.850E-03	2.130E-03	.000E+00	.000E+00	.000E+00	.000E+00
NNE	3.350E-03	3.430E-03	.000E+00	.000E+00	.000E+00	.000E+00
NE	3.430E-03	4.910E-03	.000E+00	.000E+00	.000E+00	.000E+00
ENE	3.190E-03	4.720E-03	.000E+00	.000E+00	.000E+00	.000E+00
E	2.650E-03	3.630E-03	.000E+00	.000E+00	.000E+00	.000E+00
ESE	2.630E-03	3.470E-03	.000E+00	.000E+00	.000E+00	.000E+00
SE	2.460E-03	3.460E-03	.000E+00	.000E+00	.000E+00	.000E+00
SSE	2.670E-03	4.810E-03	.000E+00	.000E+00	.000E+00	.000E+00
S	2.750E-03	6.470E-03	.000E+00	.000E+00	.000E+00	.000E+00
SSW	2.330E-03	6.290E-03	.000E+00	.000E+00	.000E+00	.000E+00
SW	1.940E-03	5.120E-03	.000E+00	.000E+00	.000E+00	.000E+00
WSW	1.880E-03	3.200E-03	.000E+00	.000E+00	.000E+00	.000E+00
W	1.420E-03	2.150E-03	.000E+00	.000E+00	.000E+00	.000E+00
WNW	1.600E-03	1.720E-03	.000E+00	.000E+00	.000E+00	.000E+00
NW	1.690E-03	1.840E-03	.000E+00	.000E+00	.000E+00	.000E+00
NNW	2.110E-03	1.810E-03	.000E+00	.000E+00	.000E+00	.000E+00

OCLASS: B

N	3.200E-04	7.800E-04	4.900E-04	.000E+00	.000E+00	.000E+00
NNE	7.900E-04	2.160E-03	7.000E-04	.000E+00	.000E+00	.000E+00
NE	1.040E-03	3.120E-03	8.200E-04	.000E+00	.000E+00	.000E+00
ENE	2.900E-04	1.720E-03	5.900E-04	.000E+00	.000E+00	.000E+00
E	1.300E-04	6.000E-04	2.600E-04	.000E+00	.000E+00	.000E+00
ESE	1.300E-04	2.900E-04	2.000E-04	.000E+00	.000E+00	.000E+00
SE	2.200E-04	3.300E-04	2.600E-04	.000E+00	.000E+00	.000E+00
SSE	2.900E-04	9.700E-04	6.200E-04	.000E+00	.000E+00	.000E+00
S	3.200E-04	2.110E-03	1.330E-03	.000E+00	.000E+00	.000E+00
SSW	2.600E-04	2.760E-03	2.330E-03	.000E+00	.000E+00	.000E+00
SW	1.600E-04	2.360E-03	2.160E-03	.000E+00	.000E+00	.000E+00
WSW	1.700E-04	1.270E-03	9.800E-04	.000E+00	.000E+00	.000E+00
W	9.000E-05	5.600E-04	5.400E-04	.000E+00	.000E+00	.000E+00
WNW	7.000E-05	2.800E-04	3.900E-04	.000E+00	.000E+00	.000E+00
NW	8.000E-05	2.900E-04	4.500E-04	.000E+00	.000E+00	.000E+00
NNW	1.300E-04	5.000E-04	4.200E-04	.000E+00	.000E+00	.000E+00

OCLASS: C

N	5.000E-04	8.900E-04	1.290E-03	1.000E-04	.000E+00	.000E+00
NNE	1.110E-03	3.870E-03	1.940E-03	1.200E-04	.000E+00	.000E+00
NE	1.160E-03	5.080E-03	2.760E-03	1.500E-04	.000E+00	.000E+00
ENE	3.900E-04	1.370E-03	1.270E-03	1.000E-04	.000E+00	.000E+00
E	1.000E-04	2.600E-04	3.400E-04	.000E+00	.000E+00	.000E+00
ESE	7.000E-05	1.600E-04	3.800E-04	2.000E-05	.000E+00	.000E+00
SE	8.000E-05	2.700E-04	4.300E-04	6.000E-05	.000E+00	.000E+00
SSE	2.100E-04	7.200E-04	1.140E-03	1.000E-04	.000E+00	.000E+00
S	2.700E-04	1.250E-03	2.000E-03	1.600E-04	.000E+00	.000E+00
SSW	2.900E-04	1.610E-03	5.890E-03	7.500E-04	.000E+00	.000E+00
SW	3.300E-04	1.560E-03	7.820E-03	8.900E-04	.000E+00	.000E+00
WSW	1.600E-04	7.800E-04	3.200E-03	6.100E-04	.000E+00	.000E+00

W	3.000E-05	2.900E-04	1.190E-03	2.600E-04	.000E+00	.000E+00
WNW	7.000E-05	1.300E-04	8.400E-04	1.300E-04	.000E+00	.000E+00
NW	9.000E-05	5.000E-05	7.700E-04	7.000E-05	.000E+00	.000E+00
NNW	9.000E-05	2.200E-04	8.700E-04	1.600E-04	.000E+00	.000E+00

1 DATE Thu Jun 19 11:28:16 2003  
OSTAR INPUT, WIND FREQUENCIES ( WIND FROM )  
OCLASS: D

N	2.990E-03	1.246E-02	6.510E-03	6.930E-03	2.210E-03	9.000E-05
NNE	3.750E-03	2.513E-02	1.880E-02	6.150E-03	1.800E-03	4.400E-04
NE	2.210E-03	2.153E-02	2.361E-02	8.280E-03	2.250E-03	3.800E-04
ENE	8.100E-04	4.750E-03	6.010E-03	3.710E-03	6.000E-04	5.000E-05
E	2.700E-04	1.340E-03	1.260E-03	4.200E-04	2.000E-05	2.000E-05
ESE	1.800E-04	7.200E-04	7.800E-04	9.000E-05	.000E+00	1.000E-05
SE	1.600E-04	8.400E-04	1.230E-03	4.000E-04	1.300E-04	.000E+00
SSE	3.300E-04	2.800E-03	2.710E-03	1.490E-03	3.200E-04	2.000E-04
S	6.200E-04	5.070E-03	5.800E-03	3.310E-03	1.220E-03	7.000E-05
SSW	8.500E-04	9.980E-03	1.850E-02	1.632E-02	5.640E-03	7.200E-04
SW	1.620E-03	1.324E-02	3.203E-02	4.458E-02	2.755E-02	1.321E-02
WSW	1.290E-03	8.760E-03	1.643E-02	1.846E-02	1.258E-02	7.010E-03
W	7.800E-04	2.880E-03	4.450E-03	3.470E-03	1.280E-03	3.500E-04
WNW	4.900E-04	1.050E-03	1.610E-03	1.100E-03	5.900E-04	1.200E-04
NW	5.100E-04	7.900E-04	8.800E-04	6.500E-04	1.300E-04	4.000E-05
NNW	1.350E-03	2.760E-03	2.360E-03	2.990E-03	1.110E-03	7.000E-05

OCLASS: E

N	3.410E-03	9.750E-03	4.010E-03	.000E+00	.000E+00	.000E+00
NNE	2.870E-03	1.322E-02	5.390E-03	.000E+00	.000E+00	.000E+00
NE	1.730E-03	7.220E-03	6.060E-03	.000E+00	.000E+00	.000E+00
ENE	7.900E-04	2.570E-03	3.040E-03	.000E+00	.000E+00	.000E+00
E	2.300E-04	8.900E-04	5.300E-04	.000E+00	.000E+00	.000E+00
ESE	1.300E-04	7.300E-04	1.300E-04	.000E+00	.000E+00	.000E+00
SE	2.100E-04	1.160E-03	6.100E-04	.000E+00	.000E+00	.000E+00
SSE	4.400E-04	2.270E-03	1.330E-03	.000E+00	.000E+00	.000E+00
S	7.100E-04	3.620E-03	2.160E-03	.000E+00	.000E+00	.000E+00
SSW	1.650E-03	6.950E-03	5.900E-03	.000E+00	.000E+00	.000E+00
SW	1.990E-03	8.450E-03	1.238E-02	.000E+00	.000E+00	.000E+00
WSW	1.830E-03	7.050E-03	7.670E-03	.000E+00	.000E+00	.000E+00
W	1.010E-03	2.630E-03	1.340E-03	.000E+00	.000E+00	.000E+00
WNW	7.800E-04	1.220E-03	3.400E-04	.000E+00	.000E+00	.000E+00
NW	8.700E-04	9.300E-04	2.800E-04	.000E+00	.000E+00	.000E+00
NNW	2.240E-03	3.030E-03	8.600E-04	.000E+00	.000E+00	.000E+00

OCLASS: F

N	8.000E-03	7.430E-03	.000E+00	.000E+00	.000E+00	.000E+00
NNE	8.530E-03	8.480E-03	.000E+00	.000E+00	.000E+00	.000E+00
NE	5.710E-03	6.180E-03	.000E+00	.000E+00	.000E+00	.000E+00
ENE	4.310E-03	4.200E-03	.000E+00	.000E+00	.000E+00	.000E+00
E	3.470E-03	2.540E-03	.000E+00	.000E+00	.000E+00	.000E+00
ESE	3.180E-03	2.550E-03	.000E+00	.000E+00	.000E+00	.000E+00
SE	3.420E-03	2.440E-03	.000E+00	.000E+00	.000E+00	.000E+00
SSE	3.650E-03	3.880E-03	.000E+00	.000E+00	.000E+00	.000E+00
S	5.270E-03	6.550E-03	.000E+00	.000E+00	.000E+00	.000E+00
SSW	6.440E-03	9.690E-03	.000E+00	.000E+00	.000E+00	.000E+00
SW	6.990E-03	9.650E-03	.000E+00	.000E+00	.000E+00	.000E+00
WSW	7.080E-03	7.320E-03	.000E+00	.000E+00	.000E+00	.000E+00
W	6.530E-03	5.170E-03	.000E+00	.000E+00	.000E+00	.000E+00
WNW	6.840E-03	4.460E-03	.000E+00	.000E+00	.000E+00	.000E+00
NW	7.720E-03	4.740E-03	.000E+00	.000E+00	.000E+00	.000E+00
NNW	7.980E-03	5.060E-03	.000E+00	.000E+00	.000E+00	.000E+00

1 DATE Thu Jun 19 11:28:16 2003  
0 NOBCT, NUMBER OF BEEF CATTLE  
0 13900  
----  
SSW 4  
1 DATE Thu Jun 19 11:28:16 2003  
0 NOMCT, NUMBER OF MILK CATTLE  
0 13900  
----  
SSW 2  
1 DATE Thu Jun 19 11:28:16 2003  
0 INTFC, AREA OF VEGETABLE CROP PRODUCTION (M\*\*2)  
0 13900

-----  
SSW 1.00E+04  
1 DATE Thu Jun 19 11:28:16 2003  
  
0 INTPA, POPULATION  
0 13900  
-----  
SSW 1  
CAA88.DATA(ALLRAD88) 09/07/88. ICRP H-SUB-E AND NEW FOOD XFR FACTORS.  
TYPE=3 DOSE EQUIVALENT FACTOR (REM) SELECTED WITH Q= 20.0 AND TIME= 50.  
11 AIRDOS ORGANS PAIRED WITH DARTAB-RADRISK ORGANS:  
EFFEC WT SUM  
GONADS GONADS  
BREAST BREAST  
R MARROW R MAR  
LUNG LUNGS  
THYROID THYROID  
BON SURF ENDOST  
RMNDR RMNDR  
INT WALL INT WALL  
LIVER LIVER  
KIDNEYS KIDNEYS  
7 ORGANS AND WEIGHTS USED TO PRODUCE WEIGHTED-SUM  
GONADS 2.500E-01  
BREAST 1.500E-01  
R MAR 1.200E-01  
LUNGS 1.200E-01  
THYROID 3.000E-02  
ENDOST 3.000E-02  
RMNDR 3.000E-01  
READING DATA TYPE= OPTI  
READING DATA TYPE= GRID  
READING DATA TYPE= METE  
READING DATA TYPE= PHYS  
READING DATA TYPE= WIND  
... WARNING ... STAR DATA CONTAIN ONLY 6 CLASSES.  
READING DATA TYPE= RADI  
READING DATA TYPE= MODI  
READING DATA TYPE= AG D  
READING DATA TYPE= COMM  
...WARNING... INVALID DATA TYPE= READ. SCANNING FOR NEXT VALID DATA TYPE.  
\*\*\* END OF USER DATA; BEGIN PROCESSING \*\*\*  
  
1 ... WARNING ... OPTION(5) IS NOT SET TO 1. INPUT VALUES FOR LIST WILL BE IGNORED.  
... NOTE ... IMPFIX=1, FRACTION IMPORTED FOOD FIXED BY FRACTIONS INPUT, USAGE COMPUTATION IN  
AIRDOS WILL BE IGNORED  
1 OUTPUT OF AIRDOS-EPA COMPUTER CODE  
0  
OPTIONS SELECTED--  
FROM FACILITY RADIONUCLIDE CONCENTRATIONS ARE LISTED FOR DIRECTION AND DISTANCE  
0 RADIONUCLIDE CONCENTRATIONS LISTED ARE SECTOR-AVERAGED VALUES  
PLUME RISE IS COMPUTED FOR MOMENTUM-TYPE EMISSIONS  
THE MAIN OUTPUT TABLE IN SUBROUTINE CONCEN IS NOT PRINTED  
1 GROUND-LEVEL CHI/Q VALUES FOR AM-241 AT VARIOUS DISTANCES IN EACH  
COMPASS DIRECTION  
0  
DISTANCE CHI/Q TOWARD INDICATED DIRECTION  
(METERS) (SEC/CUBIC METER)  
0  
SW SSW N NNW NW WNW W WSW  
.000E+00 .577E-07 13900 .000E+00 .000E+00 .000E+00 .000E+00 .000E+00  
S SSE SE ESE E ENE NE NNE  
.000E+00 .000E+00 13900 .000E+00 .000E+00 .000E+00 .000E+00 .000E+00  
1 GROUND-LEVEL CHI/Q VALUES FOR CE-144 AT VARIOUS DISTANCES IN EACH  
COMPASS DIRECTION  
0  
DISTANCE CHI/Q TOWARD INDICATED DIRECTION

431.02  
01/30/2003  
Rev. 11

## **ENGINEERING DESIGN FILE**

EDF-3902  
Rev. 0  
Page 48 of 85

(METERS) (SEC/CUBIC METER)

		N	NNW	NW	WNW	W	WSW
0	SW	SSW					
.000E+00	.577E-07	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
0	NE	NNE	S	SSE	SE	ESE	E
.000E+00	.000E+00	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1	GROUND-LEVEL CHI/Q VALUES FOR CO-58 AT VARIOUS DISTANCES IN EACH						
COMPASS DIRECTION	DISTANCE (METERS)		CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)				
0	SW	SSW	N	NNW	NW	WNW	W
.000E+00	.577E-07	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
0	NE	NNE	S	SSE	SE	ESE	E
.000E+00	.000E+00	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1	GROUND-LEVEL CHI/Q VALUES FOR CO-60 AT VARIOUS DISTANCES IN EACH						
COMPASS DIRECTION	DISTANCE (METERS)		CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)				
0	SW	SSW	N	NNW	NW	WNW	W
.000E+00	.577E-07	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
0	NE	NNE	S	SSE	SE	ESE	E
.000E+00	.000E+00	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1	GROUND-LEVEL CHI/Q VALUES FOR CS-134 AT VARIOUS DISTANCES IN EACH						
COMPASS DIRECTION	DISTANCE (METERS)		CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)				
0	SW	SSW	N	NNW	NW	WNW	W
.000E+00	.577E-07	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
0	NE	NNE	S	SSE	SE	ESE	E
.000E+00	.000E+00	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1	GROUND-LEVEL CHI/Q VALUES FOR CS-137 AT VARIOUS DISTANCES IN EACH						
COMPASS DIRECTION	DISTANCE (METERS)		CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)				
0	SW	SSW	N	NNW	NW	WNW	W

431.02  
01/30/2003  
Rev. 11

# ENGINEERING DESIGN FILE

EDF-3902  
Rev. 0  
Page 49 of 85

.000E+00	.577E-07	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
0			S	SSE	SE	ESE	E	ENE
NE	NNE							
.000E+00	.000E+00	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1								
COMPASS DIRECTION								
0								
	DISTANCE (METERS)							
0								
SW	SSW		N	NNW	NW	WNW	W	WSW
.000E+00	.577E-07	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
0			S	SSE	SE	ESE	E	ENE
NE	NNE							
.000E+00	.000E+00	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1								
COMPASS DIRECTION								
0								
	DISTANCE (METERS)							
0								
SW	SSW		N	NNW	NW	WNW	W	WSW
.000E+00	.577E-07	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
0			S	SSE	SE	ESE	E	ENE
NE	NNE							
.000E+00	.000E+00	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1								
COMPASS DIRECTION								
0								
	DISTANCE (METERS)							
0								
SW	SSW		N	NNW	NW	WNW	W	WSW
.000E+00	.577E-07	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
0			S	SSE	SE	ESE	E	ENE
NE	NNE							
.000E+00	.000E+00	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1								
COMPASS DIRECTION								
0								
	DISTANCE (METERS)							
0								
SW	SSW		N	NNW	NW	WNW	W	WSW
.000E+00	.577E-07	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
0			S	SSE	SE	ESE	E	ENE
NE	NNE							



431.02  
01/30/2003  
Rev. 11

## **ENGINEERING DESIGN FILE**

EDF-3902  
Rev. 0  
Page 51 of 85

		(METERS)		(SEC/CUBIC METER)				
0			N	NNW	NW	WNW	W	WSW
SW	SSW	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
.000E+00	.577E-07		S	SSE	SE	ESE	E	ENE
0		13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
NE	NNE							
.000E+00	.000E+00	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1		GROUND-LEVEL CHI/Q VALUES FOR Y-90				AT VARIOUS DISTANCES IN EACH		
COMPASS DIRECTION								
0		DISTANCE (METERS)		CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)				
SW	SSW		N	NNW	NW	WNW	W	WSW
.000E+00	.577E-07	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
0		S	SSE	SE	ESE	E	ENE	
NE	NNE							
.000E+00	.000E+00	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1		GROUND-LEVEL CHI/Q VALUES FOR TC-99				AT VARIOUS DISTANCES IN EACH		
COMPASS DIRECTION								
0		DISTANCE (METERS)		CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)				
SW	SSW		N	NNW	NW	WNW	W	WSW
.000E+00	.577E-07	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
0		S	SSE	SE	ESE	E	ENE	
NE	NNE							
.000E+00	.000E+00	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1		GROUND-LEVEL CHI/Q VALUES FOR U-234				AT VARIOUS DISTANCES IN EACH		
COMPASS DIRECTION								
0		DISTANCE (METERS)		CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)				
SW	SSW		N	NNW	NW	WNW	W	WSW
.000E+00	.577E-07	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
0		S	SSE	SE	ESE	E	ENE	
NE	NNE							
.000E+00	.000E+00	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
1		GROUND-LEVEL CHI/Q VALUES FOR U-238				AT VARIOUS DISTANCES IN EACH		
COMPASS DIRECTION								
0		DISTANCE (METERS)		CHI/Q TOWARD INDICATED DIRECTION (SEC/CUBIC METER)				
SW	SSW		N	NNW	NW	WNW	W	WSW

431.02  
01/30/2003  
Rev. 11

# ENGINEERING DESIGN FILE

EDF-3902  
Rev. 0  
Page 52 of 85

.000E+00	.577E-07	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
0			S	SSE	SE	ESE	E	ENE
NE	NNE	13900	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00	.000E+00
.000E+00	.000E+00							

1 DATE Thu Jun 19 11:28:16 2003  
0 \*\*\*OPTIONS SELECTED FOR DOSE AND INTAKE CALCULATIONS\*\*\*  
0 CALCULATIONS ARE MADE FOR THE MAXIMALLY-EXPOSED INDIVIDUAL.  
0 TABLES FOR EACH NUCLIDE LISTING DOSES BY ORGAN AND PATHWAY  
AT EACH ENVIRONMENTAL LOCATION ARE OMITTED.  
0 ORGAN NAMES ARE INPUT.

1 DATE Thu Jun 19 11:28:16 2003  
0 \*VALUES FOR RADIONUCLIDE-INDEPENDENT VARIABLES\*

0 NUMBER OF NUCLIDES CONSIDERED	19
0 TIME DELAY--INGESTION OF PASTURE GRASS BY ANIMALS (HR)	.00E+00
0 TIME DELAY--INGESTION OF STORED FEED BY ANIMALS (HR)	.22E+04
0 TIME DELAY--INGESTION OF LEAFY VEGETABLES BY MAN (HR)	.34E+03
0 TIME DELAY--INGESTION OF PRODUCE BY MAN (HR)	.34E+03
0 REMOVAL RATE CONSTANT FOR PHYSICAL LOSS BY WEATHERING (PER HOUR)	.29E-02
0 PERIOD OF EXPOSURE DURING GROWING SEASON--PASTURE GRASS (HR)	.72E+03
0 PERIOD OF EXPOSURE DURING GROWING SEASON-- CROPS OR LEAFY VEGETABLES (HR)	.14E+04
0 AGRICULTURAL PRODUCTIVITY BY UNIT AREA (GRASS-COW-MILK-MAN PATHWAY (KG/SQ. METER))	.28E+00
0 AGRICULTURAL PRODUCTIVITY BY UNIT AREA (PRODUCE OR LEAFY VEG INGESTED BY MAN (KG/SQ METER))	.72E+00
0 FRACTION OF YEAR ANIMALS GRAZE ON PASTURE	.40E+00
0 FRACTION OF DAILY FEED THAT IS PASTURE GRASS WHEN ANIMAL GRAZES ON PASTURE	.43E+00
0 CONSUMPTION RATE OF CONTAMINATED FEED OR FORAGE BY AN ANIMAL IN KG/DAY (DRY WEIGHT)	.16E+02
0 TRANSPORT TIME FROM ANIMAL FEED-MILK-MAN (DAY)	.20E+01
0 RATE OF INGESTION OF PRODUCE BY MAN (KG/YR)	.18E+03
0 RATE OF INGESTION OF MILK BY MAN (LITERS/YR)	.11E+03
0 RATE OF INGESTION OF MEAT BY MAN (KG/YR)	.85E+02
0 RATE OF INGESTION OF LEAFY VEGETABLES BY MAN (KG/YR)	.18E+02
0 AVERAGE TIME FROM SLAUGHTER OF MEAT ANIMAL TO CONSUMPTION (DAY)	.20E+02
0 FRACTION OF PRODUCE INGESTED GROWN IN GARDEN OF INTEREST	.10E+01
0 FRACTION OF LEAFY VEGETABLES GROWN IN GARDEN OF INTEREST	.10E+01
0 PERIOD OF LONG-TERM BUILDUP FOR ACTIVITY IN SOIL (YEARS)	.10E+03
0 EFFECTIVE SURFACE DENSITY OF SOILKG/SQ. M, DRY WEIGHT. (ASSUMES 15 CM PLOW LAYER)	.22E+03
0 VEGETABLE INGESTION RATIO-IMMEDIATE SURROUNDING AREA/TOTAL WITHIN AREA	.70E+00
0 MEAT INGESTION RATIO-IMMEDIATE SURROUNDING AREA/TOTAL WITHIN AREA	.44E+00
0 MILK INGESTION RATIO-IMMEDIATE SURROUNDING AREA/TOTAL WITHIN AREA	.40E+00
0 MINIMUM FRACTIONS OF FOOD TYPES FROM OUTSIDE AREA LISTED BELOW ARE ACTUAL FIXED VALUES	
0 MINIMUM FRACTION VEGETABLES INGESTED FROM OUTSIDE AREA	.00E+00
0 MINIMUM FRACTION MEAT INGESTED FROM OUTSIDE AREA	.00E+00
0 MINIMUM FRACTION MILK INGESTED FROM OUTSIDE AREA	.00E+00
0 INHALATION RATE OF MAN (CUBIC CENTIMETERS/HR)	.92E+06
0 BUILDUP TIME FOR RADIONUCLIDES DEPOSITED ON GROUND AND WATER (DAYS)	.37E+05
0 DILUTION FACTOR FOR WATER FOR SWIMMING (CM)	.10E+01
0 FRACTION OF TIME SPENT SWIMMING	.00E+00
0 MUSCLE MASS OF ANIMAL AT SLAUGHTER (KG)	.20E+03
0 FRACTION OF ANIMAL HERD SLAUGHTERED PER DAY	.38E-02
0 MILK PRODUCTION OF COW (LITERS/DAY)	.11E+02
0 FALLOUT INTERCEPTION FRACTION-VEGETABLES	.20E+00
0 FALLOUT INTERCEPTION FRACTION-PASTURE	.57E+00
0 FRACTION OF RADIOACTIVITY RETAINED ON LEAFY VEGETABLES AND PRODUCE AFTER WASHING	.50E+00

1 DATE Thu Jun 19 11:28:16 2003  
0 \*COMPUTED VALUES FOR THE AREA\*

0	TOTAL POPULATION	1.0
0	TOTAL NUMBER OF MEAT ANIMALS	4
0	TOTAL NUMBER OF MILK CATTLE	2
0	TOTAL AREA OF VEGETABLE FOOD CROPS (SQUARE METERS)	.10E+05
0	TOTAL MEAT CONSUMPTION (KG PER YEAR)	.85E+02
0	TOTAL MEAT PRODUCTION (KG PER YEAR)	.11E+04
0	TOTAL MILK CONSUMPTION (LITERS/YEAR)	.11E+03
0	TOTAL MILK PRODUCTION (LITERS/YEAR)	.80E+04
0	TOTAL VEGETABLE FOOD CONSUMPTION (KG PER YEAR)	.19E+03
0	TOTAL VEGETABLE FOOD PRODUCED (KG PER YEAR)	.72E+04
1	DATE Thu Jun 19 11:28:16 2003	
0	*LIST OF INPUT DATA FOR NUCLIDE AM-241 *	
0	RADIOACTIVE DECAY CONSTANT (PER DAY)	.44E-05
0	ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY)	.55E-04
0	ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY)	.00E+00
0	AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH L OF MILK (DAYS/L)	.40E-06
0	FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG)	.35E-05
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL)	.55E-02
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY EDIBLE PARTS OF CROPS (IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)	.11E-03
0	GI UPTAKE FRACTION (INHALATION)	.10E-02
0	GI UPTAKE FRACTION (INGESTION)	.10E-02
0	PARTICLE SIZE (MICRONS)	.10E+01
0	SOLUBILITY CLASS	W
1	DATE Thu Jun 19 11:28:16 2003	
0	*LIST OF INPUT DATA FOR NUCLIDE CE-144 *	
0	RADIOACTIVE DECAY CONSTANT (PER DAY)	.24E-02
0	ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY)	.55E-04
0	ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY)	.00E+00
0	AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH L OF MILK (DAYS/L)	.20E-04
0	FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG)	.75E-03
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL)	.10E-01
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY EDIBLE PARTS OF CROPS (IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)	.17E-02
0	GI UPTAKE FRACTION (INHALATION)	.30E-03
0	GI UPTAKE FRACTION (INGESTION)	.30E-03
0	PARTICLE SIZE (MICRONS)	.10E+01
0	SOLUBILITY CLASS	Y
1	DATE Thu Jun 19 11:28:16 2003	
0	*LIST OF INPUT DATA FOR NUCLIDE CO-58 *	
0	RADIOACTIVE DECAY CONSTANT (PER DAY)	.98E-02
0	ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY)	.55E-04
0	ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY)	.00E+00
0	AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH L OF MILK (DAYS/L)	.20E-02
0	FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG)	.20E-01
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL)	.20E-01
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY EDIBLE PARTS OF CROPS (IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)	.30E-02
0	GI UPTAKE FRACTION (INHALATION)	.50E-01
0	GI UPTAKE FRACTION (INGESTION)	.30E+00
0	PARTICLE SIZE (MICRONS)	.10E+01
0	SOLUBILITY CLASS	Y
1	DATE Thu Jun 19 11:28:16 2003	
0	*LIST OF INPUT DATA FOR NUCLIDE CO-60 *	
0	RADIOACTIVE DECAY CONSTANT (PER DAY)	.36E-03
0	ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY)	.55E-04

0	ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY)	.00E+00
0	AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH L OF MILK (DAYS/L)	.20E-02
0	FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG)	.20E-01
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL)	.20E-01
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY EDIBLE PARTS OF CROPS (IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)	.30E-02
0	GI UPTAKE FRACTION (INHALATION)	.50E-01
0	GI UPTAKE FRACTION (INGESTION)	.30E+00
0	PARTICLE SIZE (MICRONS)	.10E+01
0	SOLUBILITY CLASS	Y
1	DATE Thu Jun 19 11:28:16 2003	
0	*LIST OF INPUT DATA FOR NUCLIDE CS-134 *	
0	RADIOACTIVE DECAY CONSTANT (PER DAY)	.92E-03
0	ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY)	.55E-04
0	ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY)	.00E+00
0	AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH L OF MILK (DAYS/L)	.70E-02
0	FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG)	.20E-01
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL)	.80E-01
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY EDIBLE PARTS OF CROPS (IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)	.13E-01
0	GI UPTAKE FRACTION (INHALATION)	.95E+00
0	GI UPTAKE FRACTION (INGESTION)	.95E+00
0	PARTICLE SIZE (MICRONS)	.10E+01
0	SOLUBILITY CLASS	D
1	DATE Thu Jun 19 11:28:16 2003	
0	*LIST OF INPUT DATA FOR NUCLIDE CS-137 *	
0	RADIOACTIVE DECAY CONSTANT (PER DAY)	.63E-04
0	ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY)	.55E-04
0	ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY)	.00E+00
0	AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH L OF MILK (DAYS/L)	.70E-02
0	FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG)	.20E-01
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL)	.80E-01
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY EDIBLE PARTS OF CROPS (IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)	.13E-01
0	GI UPTAKE FRACTION (INHALATION)	.95E+00
0	GI UPTAKE FRACTION (INGESTION)	.95E+00
0	PARTICLE SIZE (MICRONS)	.10E+01
0	SOLUBILITY CLASS	D
1	DATE Thu Jun 19 11:28:16 2003	
0	*LIST OF INPUT DATA FOR NUCLIDE BA-137M *	
0	RADIOACTIVE DECAY CONSTANT (PER DAY)	.63E-04
0	ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY)	.55E-04
0	ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY)	.00E+00
0	AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH L OF MILK (DAYS/L)	.35E-03
0	FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG)	.15E-03
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL)	.15E+00
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY EDIBLE PARTS OF CROPS (IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)	.64E-02
0	GI UPTAKE FRACTION (INHALATION)	.10E+00
0	GI UPTAKE FRACTION (INGESTION)	.10E+00
0	PARTICLE SIZE (MICRONS)	.10E+01

0 SOLUBILITY CLASS D

0

1 DATE Thu Jun 19 11:28:16 2003 \*LIST OF INPUT DATA FOR NUCLIDE NP-237 \*

0 RADIOACTIVE DECAY CONSTANT (PER DAY) .89E-09

0 ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY) .55E-04

0 ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY) .00E+00

0 AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH L OF MILK (DAYS/L) .50E-05

0 FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG) .55E-04

0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL) .10E+00

0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY EDIBLE PARTS OF CROPS (IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL) .43E-02

0 GI UPTAKE FRACTION (INHALATION) .10E-02

0 GI UPTAKE FRACTION (INGESTION) .10E-02

0 PARTICLE SIZE (MICRONS) .10E+01

0 SOLUBILITY CLASS W

0

1 DATE Thu Jun 19 11:28:16 2003 \*LIST OF INPUT DATA FOR NUCLIDE PU-238 \*

0 RADIOACTIVE DECAY CONSTANT (PER DAY) .22E-04

0 ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY) .55E-04

0 ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY) .00E+00

0 AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH L OF MILK (DAYS/L) .10E-06

0 FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG) .50E-06

0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL) .45E-03

0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY EDIBLE PARTS OF CROPS (IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL) .19E-04

0 GI UPTAKE FRACTION (INHALATION) .10E-02

0 GI UPTAKE FRACTION (INGESTION) .10E-02

0 PARTICLE SIZE (MICRONS) .10E+01

0 SOLUBILITY CLASS Y

0

1 DATE Thu Jun 19 11:28:16 2003 \*LIST OF INPUT DATA FOR NUCLIDE RU-103 \*

0 RADIOACTIVE DECAY CONSTANT (PER DAY) .18E-01

0 ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY) .55E-04

0 ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY) .00E+00

0 AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH L OF MILK (DAYS/L) .60E-06

0 FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG) .20E-02

0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL) .75E-01

0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY EDIBLE PARTS OF CROPS (IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL) .86E-02

0 GI UPTAKE FRACTION (INHALATION) .50E-01

0 GI UPTAKE FRACTION (INGESTION) .50E-01

0 PARTICLE SIZE (MICRONS) .10E+01

0 SOLUBILITY CLASS Y

0

1 DATE Thu Jun 19 11:28:16 2003 \*LIST OF INPUT DATA FOR NUCLIDE RU-106 \*

0 RADIOACTIVE DECAY CONSTANT (PER DAY) .19E-02

0 ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY) .55E-04

0 ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY) .00E+00

0 AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH L OF MILK (DAYS/L) .60E-06

0 FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG) .20E-02

0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL) .75E-01

0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY  
EDIBLE PARTS OF CROPS .86E-02  
(IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)  
0 GI UPTAKE FRACTION (INHALATION) .50E-01  
0 GI UPTAKE FRACTION (INGESTION) .50E-01  
0 PARTICLE SIZE (MICRONS) .10E+01  
0 SOLUBILITY CLASS Y

1 DATE Thu Jun 19 11:28:16 2003  
\*LIST OF INPUT DATA FOR NUCLIDE RH-106 \*  
0 RADIOACTIVE DECAY CONSTANT (PER DAY) .19E-02  
0 ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY) .55E-04  
0 ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY) .00E+00  
0 AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE  
WHICH APPEARS IN EACH L OF MILK (DAYS/L) .10E-01  
0 FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE  
WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG) .20E-02  
0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR  
PASTURE AND FORAGE .15E+00  
(IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL)  
0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY  
EDIBLE PARTS OF CROPS .17E-01  
(IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)  
0 GI UPTAKE FRACTION (INHALATION) .50E-01  
0 GI UPTAKE FRACTION (INGESTION) .50E-01  
0 PARTICLE SIZE (MICRONS) .10E+01  
0 SOLUBILITY CLASS Y

1 DATE Thu Jun 19 11:28:16 2003  
\*LIST OF INPUT DATA FOR NUCLIDE SB-125 \*  
0 RADIOACTIVE DECAY CONSTANT (PER DAY) .69E-03  
0 ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY) .55E-04  
0 ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY) .00E+00  
0 AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE  
WHICH APPEARS IN EACH L OF MILK (DAYS/L) .10E-03  
0 FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE  
WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG) .10E-02  
0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR  
PASTURE AND FORAGE .20E+00  
(IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL)  
0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY  
EDIBLE PARTS OF CROPS .13E-01  
(IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)  
0 GI UPTAKE FRACTION (INHALATION) .10E-01  
0 GI UPTAKE FRACTION (INGESTION) .10E+00  
0 PARTICLE SIZE (MICRONS) .10E+01  
0 SOLUBILITY CLASS W

1 DATE Thu Jun 19 11:28:16 2003  
\*LIST OF INPUT DATA FOR NUCLIDE TE-125M \*  
0 RADIOACTIVE DECAY CONSTANT (PER DAY) .68E-03  
0 ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY) .55E-04  
0 ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY) .00E+00  
0 AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE  
WHICH APPEARS IN EACH L OF MILK (DAYS/L) .20E-03  
0 FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE  
WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG) .15E-01  
0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR  
PASTURE AND FORAGE .25E-01  
(IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL)  
0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY  
EDIBLE PARTS OF CROPS .17E-02  
(IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)  
0 GI UPTAKE FRACTION (INHALATION) .20E+00  
0 GI UPTAKE FRACTION (INGESTION) .20E+00  
0 PARTICLE SIZE (MICRONS) .10E+01  
0 SOLUBILITY CLASS W

1 DATE Thu Jun 19 11:28:16 2003  
\*LIST OF INPUT DATA FOR NUCLIDE SR-90 \*  
0 RADIOACTIVE DECAY CONSTANT (PER DAY) .66E-04  
0 ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY) .55E-04  
0 ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY) .00E+00  
0 AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE

0	WHICH APPEARS IN EACH L OF MILK (DAYS/L)	.15E-02
0	FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG)	.30E-03
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL)	.25E+01
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY EDIBLE PARTS OF CROPS (IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)	.11E+00
0	GI UPTAKE FRACTION (INHALATION)	.30E+00
0	GI UPTAKE FRACTION (INGESTION)	.30E+00
0	PARTICLE SIZE (MICRONS)	.10E+01
0	SOLUBILITY CLASS	D
0	DATE Thu Jun 19 11:28:16 2003	
0	*LIST OF INPUT DATA FOR NUCLIDE Y-90 *	
0	RADIOACTIVE DECAY CONSTANT (PER DAY)	.66E-04
0	ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY)	.55E-04
0	ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY)	.00E+00
0	AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH L OF MILK (DAYS/L)	.20E-04
0	FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG)	.30E-03
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL)	.15E-01
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY EDIBLE PARTS OF CROPS (IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)	.26E-02
0	GI UPTAKE FRACTION (INHALATION)	.10E-03
0	GI UPTAKE FRACTION (INGESTION)	.10E-03
0	PARTICLE SIZE (MICRONS)	.10E+01
0	SOLUBILITY CLASS	Y
0	DATE Thu Jun 19 11:28:16 2003	
0	*LIST OF INPUT DATA FOR NUCLIDE TC-99 *	
0	RADIOACTIVE DECAY CONSTANT (PER DAY)	.89E-08
0	ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY)	.55E-04
0	ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY)	.00E+00
0	AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH L OF MILK (DAYS/L)	.10E-01
0	FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG)	.85E-02
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL)	.95E+01
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY EDIBLE PARTS OF CROPS (IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)	.64E+00
0	GI UPTAKE FRACTION (INHALATION)	.80E+00
0	GI UPTAKE FRACTION (INGESTION)	.80E+00
0	PARTICLE SIZE (MICRONS)	.10E+01
0	SOLUBILITY CLASS	W
0	DATE Thu Jun 19 11:28:16 2003	
0	*LIST OF INPUT DATA FOR NUCLIDE U-234 *	
0	RADIOACTIVE DECAY CONSTANT (PER DAY)	.78E-08
0	ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY)	.55E-04
0	ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY)	.00E+00
0	AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH L OF MILK (DAYS/L)	.60E-03
0	FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG)	.20E-03
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR PASTURE AND FORAGE (IN PCI/KG DRY WEIGHT PER PCI/KG DRY SOIL)	.85E-02
0	CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY EDIBLE PARTS OF CROPS (IN PCI/KG WET WEIGHT PER PCI/KG DRY SOIL)	.17E-02
0	GI UPTAKE FRACTION (INHALATION)	.20E-02
0	GI UPTAKE FRACTION (INGESTION)	.20E+00
0	PARTICLE SIZE (MICRONS)	.10E+01
0	SOLUBILITY CLASS	Y

1 DATE Thu Jun 19 11:28:16 2003  
0 \*LIST OF INPUT DATA FOR NUCLIDE U-238 \*

0 RADIOACTIVE DECAY CONSTANT (PER DAY) .42E-12  
0 ENVIRONMENTAL DECAY CONSTANT--SURFACE (PER DAY) .55E-04  
0 ENVIRONMENTAL DECAY CONSTANT--WATER (PER DAY) .00E+00  
0 AVERAGE FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE  
WHICH APPEARS IN EACH L OF MILK (DAYS/L) .60E-03  
0 FRACTION OF ANIMAL'S DAILY INTAKE OF NUCLIDE  
WHICH APPEARS IN EACH KG OF FLESH (DAYS/KG) .20E-03  
0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL FOR  
PASTURE AND FORAGE .85E-02  
0 CONCENTRATION FACTOR FOR UPTAKE OF NUCLIDE FROM SOIL BY  
EDIBLE PARTS OF CROPS .17E-02  
0 GI UPTAKE FRACTION (INHALATION) .20E-02  
0 GI UPTAKE FRACTION (INGESTION) .20E+00  
0 PARTICLE SIZE (MICRONS) .10E+01  
0 SOLUBILITY CLASS Y

1 DATE Thu Jun 19 11:28:16 2003  
0 EXPOSURE LEVELS FOR SHORT-LIFE PROGENY OF RN-222  
AT VARIOUS LOCATIONS IN THE ENVIRONMENT

AREA	EXPOSURE LEVEL(.7 EQF) (PERSON .WL)	ADJUSTED EQUIL. FRACT.	ADJUSTED EXPOSURE LEVELS
------	--	---------------------------	--------------------------------

WIND DISTANCE  
TOWARD (METERS)

SSW	13900	.0E+00	.00	.0E+00
1	DATE Thu Jun 19 11:28:16 2003			
0	EXPOSURE LEVEL FOR SHORT-LIFE PROGENY OR RN-222 AT LOCATION OF MAXIMUM INDIVIDUAL DOSE FROM ALL PATHWAYS FOR EACH ORGAN			
ORGAN	LOCATION OF EXPOSURE LEVEL(.7 EQF) MAXIMUM DOSE		ADJUSTED EQUIL. FRACT.	ADJUSTED EXPOSURE LEVELS
EFFEC	8	1	.0E+00	.0E+00
GONADS	8	1	.0E+00	.0E+00
BREAST	8	1	.0E+00	.0E+00
R MARROW	8	1	.0E+00	.0E+00
LUNG	8	1	.0E+00	.0E+00
THYROID	8	1	.0E+00	.0E+00
BON SURF	8	1	.0E+00	.0E+00
RMNDR	8	1	.0E+00	.0E+00
INT WALL	8	1	.0E+00	.0E+00
LIVER	8	1	.0E+00	.0E+00
KIDNEYS	8	1	.0E+00	.0E+00

0 IHEAD= 1  
ICRP= 1

00 INDICATES THE TABLE WILL NOT BE PRINTED  
1 INDICATES INDIVIDUAL VALUES WILL BE PRINTED  
2 INDICATES MEAN INDIVIDUAL VALUES WILL BE PRINTED  
3 INDICATES COLLECTIVE VALUES WILL BE PRINTED  
4 INDICATES ALL OF THE ABOVE WILL BE PRINTED

QUANTITY TABLE NO. 1 2 3 4 5 6 7

1.DOSE RATES	1	0	1	1	0	0	0
2.HEALTH RISKS	0	0	0	0	0	0	0
3.RISK EQUIVALENT FACTOR	0	0	0	0	0	0	0

TABLES FOR THE SELECTED INDIVIDUAL WILL BE DONE FOR THE LOCATION HAVING 100.00 % OF THE HIGHEST  
TOTAL RISK.

DOSE RATE TABLES COMBINING LOW AND HIGH LET WILL BE PRINTED.  
HEALTH RISK TABLES COMBINING LOW AND HIGH LET WILL BE PRINTED.  
OTHE GROUND SURFACE CORRECTION FACTOR IS .50

OTHERE ARE 8 ORGANS TO BE OUTPUT. THEY ARE:

ORGAN	TIME	ORGAN	TIME	ORGAN	TIME
-------	------	-------	------	-------	------



431.02  
01/30/2003  
Rev. 11

# ENGINEERING DESIGN FILE

EDF-3902  
Rev. 0  
Page 60 of 85

17	TC-99	W	1.00E+00	.00E+00	8.00E-01	.00E+00	.00E+00	1	2	1	1	1	2	1	1	0
1	1	2	1													
18	U-234	Y	1.00E+00	.00E+00	2.00E-01	.00E+00	.00E+00	3	15	1	1	3	15	1	1	0
1	1	15	3													
19	U-238	Y	1.00E+00	.00E+00	2.00E-01	.00E+00	.00E+00	3	15	1	1	3	15	1	1	0
1	1	15	3													

OTHERE ARE 19 RADIONUCLIDES TO BE OUTPUT.

NUCLIDE	PARTICLE SIZE	CLEARANCE CLASS	STOMACH	G.I. SI	ABSORPTION	FRACTION	ULI	LLI
AM-241	1.00000	W	.00000	.00100			.00000	
.00000								
CE-144	1.00000	Y	.00000	.00030			.00000	
.00000								
CO-58	1.00000	Y	.00000	.30000			.00000	
.00000								
CO-60	1.00000	Y	.00000	.30000			.00000	
.00000								
CS-134	1.00000	D	.00000	.95000			.00000	
.00000								
CS-137	1.00000	D	.00000	.95000			.00000	
.00000								
BA-137M	1.00000	D	.00000	.10000			.00000	
.00000								
NP-237	1.00000	W	.00000	.00100			.00000	
.00000								
PU-238	1.00000	Y	.00000	.00100			.00000	
.00000								
RU-103	1.00000	Y	.00000	.05000			.00000	
.00000								
RU-106	1.00000	Y	.00000	.05000			.00000	
.00000								
RH-106	1.00000	Y	.00000	.05000			.00000	
.00000								
SB-125	1.00000	W	.00000	.10000			.00000	
.00000								
TE-125M	1.00000	W	.00000	.20000			.00000	
.00000								
SR-90	1.00000	D	.00000	.30000			.00000	
.00000								
Y-90	1.00000	Y	.00000	.00010			.00000	
.00000								
TC-99	1.00000	W	.00000	.80000			.00000	
.00000								
U-234	1.00000	Y	.00000	.20000			.00000	
.00000								
U-238	1.00000	Y	.00000	.20000			.00000	
.00000								

1 DATE Thu Jun 19 11:28:16 2003

THE LOCATION USED FOR THE SELECTED INDIVIDUAL EXPOSURE IS  
====> 13900 METERS SSW FROM THE SOURCE.

THE LIFETIME FATAL CANCER RISK IS 3.82E-07.

ORGAN DOSE WEIGHTING FACTORS

ORGAN	FACTORS	PATHWAYS
GONADS	.25000	1 2 3 4
BREAST	.15000	1 2 3 4
R MAR	.12000	1 2 3 4
LUNGS	.12000	1 2 3 4
THYROID	.03000	1 2 3 4
ENDOST	.03000	1 2 3 4
RMNDR	.30000	1 2 3 4

1 DATE Thu Jun 19 11:28:16 2003

0

## ORGAN DOSE/EXPOSURE SUMMARY

0\*\*\* SELECTED INDIVIDUAL \*\*\*

ODOSE RATES:

EFFEC	WT.SUM	ORGANS:	GONADS	BREAST	R MAR	LUNGS	THYROID	ENDOST	RMNDR
DOSE EQUIVALENT (REM/Y)	1.03E-02	8.35E-03	5.21E-02	3.52E-02	8.65E-03	2.19E-01	1.46E-02		
2.55E-02	2.55E-02								

1 DATE Thu Jun 19 11:28:16 2003

0

PATHWAY DOSE/EXPOSURE SUMMARY

0\*\*\* SELECTED INDIVIDUAL \*\*\*

ODOSE RATES:

WEIGHTED SUMS OF ORGAN DOSE RATES

	PATHWAYS:	INGESTION	INHALATION	AIR	GROUND	INTERNAL	EXTERNAL	TOTAL
				IMMERSION	SURFACE			
DOSE EQUIVALENT (REM/Y)	9.21E-03	1.06E-02	3.81E-07	5.72E-03	1.98E-02	5.72E-03	2.55E-02	
1 DATE	Thu Jun 19	11:28:16	2003					
0								

NUCLIDE DOSE/EXPOSURE SUMMARY

0\*\*\* SELECTED INDIVIDUAL \*\*\*

ODOSE RATES:

WEIGHTED SUMS OF ORGAN DOSE RATES

	NUCLIDES:	AM-241	CE-144	CO-58	CO-60	CS-134	CS-137	BA-137M
NP-237	PU-238	RU-103						
		RU-106	RH-106	SB-125	TE-125M	SR-90	Y-90	TC-99
U-234	U-238	TOTAL						
DOSE EQUIVALENT (REM/Y)	3.37E-03	2.04E-10	9.82E-23	5.73E-06	5.72E-07	1.67E-03	5.71E-03	
2.07E-03	3.72E-03	1.18E-35						
		5.68E-09	9.36E-10	1.70E-07	6.67E-09	6.88E-03	1.59E-04	4.17E-08
9.48E-04	9.78E-04	2.55E-02						
1 DATE	Thu Jun 19	11:28:16	2003					
0								

RISK/RISK EQUIVALENT SUMMARY

0\*\*\* SELECTED INDIVIDUAL \*\*\*

OLIFETIME FATAL CANCER RISK:

LIVER	PANCREAS	URINARY	CANCERS:	LEUKEMIA	BONE	THYROID	BREAST	LUNG	STOMACH	BOWEL
			OTHER		TOTAL					
TOTAL			1.27E-07	1.79E-08	3.87E-09	3.21E-08	8.21E-08	2.03E-08	1.39E-08	
4.38E-08	1.46E-08	9.31E-09			1.78E-08	3.82E-07				
0										
LIVER	PANCREAS	URINARY	CANCERS:	LEUKEMIA	BONE	THYROID	BREAST	LUNG	STOMACH	BOWEL
			OTHER		TOTAL					
COMBINED (YR)			2.90E+01	2.45E+01	2.81E+01	2.14E+01	2.27E+01	2.14E+01	2.15E+01	
1.95E+01	2.14E+01	2.14E+01			2.14E+01	2.42E+01				
1 DATE	Thu Jun 19	11:28:16	2003							
0										

PATHWAY RISK/RISK EQUIVALENT SUMMARY

0\*\*\* SELECTED INDIVIDUAL \*\*\*

OLIFETIME FATAL CANCER RISK:

	PATHWAYS:	INGESTION	INHALATION	AIR	GROUND	INTERNAL	EXTERNAL	TOTAL	
				IMMERSION	SURFACE				
TOTAL			1.59E-07	8.62E-08	9.12E-12	1.37E-07	2.45E-07	1.37E-07	3.82E-07
1 DATE	Thu Jun 19	11:28:16	2003						
0									

NUCLIDE RISK/RISK EQUIVALENT SUMMARY

0\*\*\* SELECTED INDIVIDUAL \*\*\*

OLIFETIME FATAL CANCER RISK:

	NUCLIDES:	AM-241	CE-144	CO-58	CO-60	CS-134	CS-137	BA-137M			
NP-237	PU-238	RU-103									
		RU-106	RH-106	SB-125	TE-125M	SR-90	Y-90	TC-99			
U-234	U-238	TOTAL									
1.05E-08	3.14E-08	3.04E-40			1.72E-08	9.09E-15	2.45E-27	1.44E-10	1.45E-11	4.37E-08	1.37E-07
1.21E-08	1.26E-08	3.82E-07			2.52E-13	2.24E-14	4.07E-12	1.06E-13	1.16E-07	2.16E-09	1.53E-12
1			INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES								
			INDIVIDUAL DOSE EQ. RATE (REM/YEAR)								

0\*\*\* FOR PATHWAY: INGESTION

0 ORGAN : RMNDR	GONADS	BREAST	R MAR	LUNGS	THYROID	ENDOST
EFFEC	WT.	SUM				

ONUCLIDES

AM-241	5.01E-05	4.86E-06	3.17E-04	4.86E-06	4.85E-06	3.90E-03
1.75E-04 2.22E-04 2.22E-04 % OF TOTAL INGESTION	2.49E+00	2.43E-01	8.94E-01	2.60E-01	2.31E-01	4.42E+00
4.30E+00 2.41E+00 2.41E+00 % OF TOTAL INTERNAL	1.39E+00	2.21E-01	6.74E-01	1.61E-02	2.11E-01	1.83E+00
1.84E+00 1.12E+00 1.12E+00 % OF TOTAL	4.85E-01	5.82E-02	6.08E-01	1.38E-02	5.61E-02	1.78E+00
1.20E+00 8.69E-01 8.69E-01						
CE-144	7.96E-13	1.41E-13	1.02E-12	7.62E-14	6.10E-14	1.50E-12
2.15E-10 6.49E-11 6.49E-11 % OF TOTAL INGESTION	3.97E-08	7.02E-09	2.88E-09	4.07E-09	2.90E-09	1.70E-09
5.27E-06 7.05E-07 7.05E-07 % OF TOTAL INTERNAL	2.21E-08	6.39E-09	2.17E-09	2.53E-10	2.65E-09	7.03E-10
2.25E-06 3.28E-07 3.28E-07 % OF TOTAL	7.70E-09	1.68E-09	1.96E-09	2.17E-10	7.05E-10	6.84E-10
1.47E-06 2.54E-07 2.54E-07						
CO-58	3.06E-23	1.50E-23	1.55E-23	1.10E-23	1.44E-23	8.47E-24
4.34E-23 2.68E-23 2.68E-23 % OF TOTAL INGESTION	1.53E-18	7.51E-19	4.39E-20	5.86E-19	6.83E-19	9.59E-21
1.06E-18 2.91E-19 2.91E-19 % OF TOTAL INTERNAL	8.52E-19	6.84E-19	3.31E-20	3.64E-20	6.24E-19	3.97E-21
4.55E-19 1.35E-19 1.35E-19 % OF TOTAL	2.96E-19	1.80E-19	2.99E-20	3.12E-20	1.66E-19	3.87E-21
2.97E-19 1.05E-19 1.05E-19						
CO-60	4.69E-07	4.55E-07	4.24E-07	4.41E-07	4.98E-07	2.79E-07
7.12E-07 5.26E-07 5.26E-07 % OF TOTAL INGESTION	2.33E-02	2.27E-02	1.20E-03	2.35E-02	2.37E-02	3.16E-04
1.74E-02 5.71E-03 5.71E-03 % OF TOTAL INTERNAL	1.30E-02	2.07E-02	9.04E-04	1.46E-03	2.17E-02	1.31E-04
7.46E-03 2.66E-03 2.66E-03 % OF TOTAL	4.54E-03	5.45E-03	8.15E-04	1.25E-03	5.75E-03	1.28E-04
4.87E-03 2.06E-03 2.06E-03						
CS-134	2.67E-07	3.12E-07	2.91E-07	2.70E-07	3.52E-07	1.94E-07
3.27E-07 2.95E-07 2.95E-07 % OF TOTAL INGESTION	1.33E-02	1.56E-02	8.22E-04	1.44E-02	1.68E-02	2.20E-04
8.02E-03 3.21E-03 3.21E-03 % OF TOTAL INTERNAL	7.42E-03	1.42E-02	6.20E-04	8.95E-04	1.53E-02	9.09E-05
3.43E-03 1.49E-03 1.49E-03 % OF TOTAL	2.58E-03	3.74E-03	5.59E-04	7.66E-04	4.07E-03	8.85E-05
2.24E-03 1.16E-03 1.16E-03						
CS-137	1.57E-03	1.71E-03	1.56E-03	1.58E-03	1.81E-03	1.09E-03
1.76E-03 1.64E-03 1.64E-03 % OF TOTAL INGESTION	7.82E+01	8.55E+01	4.40E+00	8.45E+01	8.62E+01	1.23E+00
4.32E+01 1.78E+01 1.78E+01 % OF TOTAL INTERNAL	4.37E+01	7.79E+01	3.32E+00	5.26E+00	7.88E+01	5.11E-01
1.85E+01 8.30E+00 8.30E+00 % OF TOTAL	1.52E+01	2.05E+01	2.99E+00	4.50E+00	2.09E+01	4.97E-01
1.21E+01 6.44E+00 6.44E+00						
BA-137M	3.55E-09	3.84E-09	3.00E-09	4.71E-09	4.16E-10	1.65E-09
7.91E-08 2.62E-08 2.62E-08 % OF TOTAL INGESTION	1.77E-04	1.92E-04	8.47E-06	2.52E-04	1.98E-05	1.87E-06
1.94E-03 2.84E-04 2.84E-04 % OF TOTAL INTERNAL	9.86E-05	1.75E-04	6.39E-06	1.57E-05	1.81E-05	7.74E-07
8.29E-04 1.32E-04 1.32E-04 % OF TOTAL	3.43E-05	4.60E-05	5.76E-06	1.34E-05	4.80E-06	7.54E-07
5.41E-04 1.03E-04 1.03E-04						
NP-237	3.54E-05	3.46E-06	2.24E-04	3.46E-06	3.45E-06	2.77E-03
1.23E-04 1.57E-04 1.57E-04 % OF TOTAL INGESTION	1.76E+00	1.73E-01	6.32E-01	1.85E-01	1.64E-01	3.13E+00
3.02E+00 1.70E+00 1.70E+00 % OF TOTAL INTERNAL	9.85E-01	1.57E-01	4.77E-01	1.15E-02	1.50E-01	1.30E+00
1.29E+00 7.92E-01 7.92E-01 % OF TOTAL	3.43E-01	4.14E-02	4.30E-01	9.85E-03	3.99E-02	1.26E+00
8.44E-01 6.14E-01 6.14E-01						

PU-238						
2.81E-04	3.51E-04	3.51E-04	7.84E-05	7.67E-06	5.00E-04	7.67E-06
% OF TOTAL INGESTION			3.90E+00	3.83E-01	1.41E+00	4.10E-01
6.88E+00	3.81E+00	3.81E+00			3.65E-01	6.98E+00
% OF TOTAL INTERNAL			2.18E+00	3.49E-01	1.06E+00	2.55E-02
2.95E+00	1.77E+00	1.77E+00			3.33E-01	2.89E+00
% OF TOTAL			7.58E-01	9.19E-02	9.60E-01	2.18E-02
1.92E+00	1.38E+00	1.38E+00			8.86E-02	2.81E+00
RU-103						
8.89E-36	3.51E-36	3.51E-36	2.44E-36	5.55E-37	7.20E-37	3.27E-37
% OF TOTAL INGESTION			1.21E-31	2.77E-32	2.03E-33	1.74E-32
2.18E-31	3.81E-32	3.81E-32			1.48E-32	3.99E-34
% OF TOTAL INTERNAL			6.77E-32	2.52E-32	1.53E-33	1.08E-33
9.32E-32	1.77E-32	1.77E-32			1.35E-32	1.65E-34
% OF TOTAL			2.36E-32	6.64E-33	1.38E-33	9.29E-34
6.08E-32	1.37E-32	1.37E-32			3.59E-33	1.61E-34
RU-106						
5.62E-09	1.98E-09	1.98E-09	4.58E-10	4.12E-10	4.15E-10	4.02E-10
% OF TOTAL INGESTION			2.28E-05	2.06E-05	1.17E-06	2.15E-05
1.38E-04	2.15E-05	2.15E-05			1.94E-05	4.51E-07
% OF TOTAL INTERNAL			1.27E-05	1.87E-05	8.84E-07	1.34E-06
5.89E-05	1.00E-05	1.00E-05			1.77E-05	1.87E-07
% OF TOTAL			4.43E-06	4.93E-06	7.97E-07	1.14E-06
3.84E-05	7.77E-06	7.77E-06			4.70E-06	1.82E-07
RH-106						
2.07E-12	6.24E-13	6.24E-13	2.03E-15	3.53E-15	2.62E-15	4.54E-15
% OF TOTAL INGESTION			1.01E-10	1.76E-10	7.40E-12	2.43E-10
5.08E-08	6.77E-09	6.77E-09			1.89E-11	1.71E-12
% OF TOTAL INTERNAL			5.65E-11	1.60E-10	5.58E-12	1.51E-11
2.17E-08	3.15E-09	3.15E-09			1.73E-11	7.07E-13
% OF TOTAL			1.97E-11	4.22E-11	5.03E-12	1.29E-11
1.42E-08	2.44E-09	2.45E-09			4.59E-12	6.89E-13
SB-125						
1.59E-08	6.58E-09	6.58E-09	4.50E-09	9.15E-10	2.05E-09	5.25E-10
% OF TOTAL INGESTION			2.24E-04	4.57E-05	5.79E-06	2.81E-05
3.91E-04	7.14E-05	7.14E-05			2.24E-05	7.89E-06
% OF TOTAL INTERNAL			1.25E-04	4.16E-05	4.37E-06	1.74E-06
1.67E-04	3.32E-05	3.32E-05			2.05E-05	3.27E-06
% OF TOTAL			4.35E-05	1.10E-05	3.94E-06	1.49E-06
1.09E-04	2.58E-05	2.58E-05			5.45E-06	3.18E-06
TE-125M						
6.04E-09	4.33E-09	4.33E-09	5.59E-10	2.14E-10	5.25E-09	1.95E-10
% OF TOTAL INGESTION			2.78E-05	1.07E-05	1.48E-05	1.04E-05
1.48E-04	4.70E-05	4.70E-05			8.85E-06	6.38E-05
% OF TOTAL INTERNAL			1.55E-05	9.76E-06	1.12E-05	6.49E-07
6.33E-05	2.19E-05	2.19E-05			8.09E-06	2.64E-05
% OF TOTAL			5.41E-06	2.57E-06	1.01E-05	5.55E-07
4.13E-05	1.70E-05	1.70E-05			2.15E-06	2.57E-05
SR-90						
1.06E-03	6.55E-03	6.55E-03	2.68E-04	2.68E-04	3.27E-02	2.68E-04
% OF TOTAL INGESTION			1.33E+01	1.34E+01	9.22E+01	1.43E+01
2.61E+01	7.11E+01	7.11E+01			1.27E+01	8.18E+01
% OF TOTAL INTERNAL			7.44E+00	1.22E+01	6.96E+01	8.89E-01
1.12E+01	3.31E+01	3.31E+01			1.16E+01	3.39E+01
% OF TOTAL			2.59E+00	3.21E+00	6.27E+01	7.61E-01
7.28E+00	2.57E+01	2.57E+01			3.09E+00	3.30E+01
Y-90						
4.85E-04	1.45E-04	1.45E-04	7.73E-10	6.88E-10	1.85E-08	6.86E-10
% OF TOTAL INGESTION			3.85E-05	3.44E-05	5.23E-05	3.66E-05
1.19E+01	1.58E+00	1.58E+00			3.26E-05	2.07E-05
% OF TOTAL INTERNAL			2.15E-05	3.13E-05	3.95E-05	2.28E-06
5.08E+00	7.35E-01	7.35E-01			2.98E-05	8.56E-06
% OF TOTAL			7.48E-06	8.24E-06	3.56E-05	1.95E-06
3.32E+00	5.70E-01	5.70E-01			7.92E-06	8.34E-06
TC-99						
1.06E-07	4.14E-08	4.14E-08	6.62E-09	6.62E-09	6.62E-09	1.71E-07

% OF TOTAL INGESTION	3.30E-04	3.31E-04	1.87E-05	3.53E-04	8.14E-03	7.49E-06
2.60E-03 4.49E-04 4.49E-04						
% OF TOTAL INTERNAL	1.84E-04	3.01E-04	1.41E-05	2.20E-05	7.44E-03	3.10E-06
1.11E-03 2.09E-04 2.09E-04						
% OF TOTAL	6.40E-05	7.92E-05	1.27E-05	1.88E-05	1.98E-03	3.02E-06
7.25E-04 1.62E-04 1.62E-04						
 U-234	 2.54E-06	 2.54E-06	 6.79E-05	 2.54E-06	 2.54E-06	 1.07E-03
9.20E-05 6.93E-05 6.93E-05						
% OF TOTAL INGESTION	1.26E-01	1.27E-01	1.92E-01	1.36E-01	1.21E-01	1.21E+00
2.25E+00 7.52E-01 7.52E-01						
% OF TOTAL INTERNAL	7.06E-02	1.15E-01	1.45E-01	8.43E-03	1.10E-01	5.03E-01
9.64E-01 3.50E-01 3.50E-01						
% OF TOTAL	2.46E-02	3.04E-02	1.30E-01	7.22E-03	2.93E-02	4.89E-01
6.29E-01 2.72E-01 2.72E-01						
 U-238	 2.65E-06	 2.65E-06	 8.30E-05	 2.65E-06	 2.64E-06	 1.08E-03
9.53E-05 7.23E-05 7.23E-05						
% OF TOTAL INGESTION	1.32E-01	1.32E-01	2.35E-01	1.41E-01	1.26E-01	1.22E+00
2.34E+00 7.85E-01 7.85E-01						
% OF TOTAL INTERNAL	7.36E-02	1.21E-01	1.77E-01	8.79E-03	1.15E-01	5.05E-01
9.99E-01 3.65E-01 3.65E-01						
% OF TOTAL	2.56E-02	3.17E-02	1.60E-01	7.52E-03	3.05E-02	4.91E-01
6.52E-01 2.83E-01 2.83E-01						
 TOTAL	 2.01E-03	 2.00E-03	 3.54E-02	 1.87E-03	 2.10E-03	 8.83E-02
4.08E-03 9.21E-03 9.21E-03						

1 INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES  
INDIVIDUAL DOSE EQ. RATE(MREM/YEAR)

0\*\*\* FOR PATHWAY: INHALATION

0 ORGAN : RMNDR EFFEC WT. SUM ONUCLIDES	GONADS	BREAST	R MAR	LUNGS	THYROID	ENDOST
 AM-241	 7.03E-04	 6.82E-05	 4.44E-03	 4.67E-04	 6.82E-05	 5.48E-02
2.42E-03 3.15E-03 3.15E-03						
% OF TOTAL INHALATION	4.43E+01	3.46E+01	3.86E+01	1.65E+00	3.43E+01	4.39E+01
4.44E+01 2.97E+01 2.97E+01						
% OF TOTAL INTERNAL	1.96E+01	3.10E+00	9.47E+00	1.55E+00	2.96E+00	2.57E+01
2.54E+01 1.59E+01 1.59E+01						
% OF TOTAL	6.80E+00	8.17E-01	8.54E+00	1.33E+00	7.88E-01	2.50E+01
1.66E+01 1.23E+01 1.23E+01						
 CE-144	 3.30E-13	 4.78E-13	 3.89E-12	 1.06E-09	 4.02E-13	 6.54E-12
2.58E-11 1.36E-10 1.36E-10						
% OF TOTAL INHALATION	2.08E-08	2.43E-07	3.38E-08	3.76E-06	2.03E-07	5.24E-09
4.73E-07 1.28E-06 1.28E-06						
% OF TOTAL INTERNAL	9.17E-09	2.17E-08	8.30E-09	3.53E-06	1.75E-08	3.07E-09
2.71E-07 6.87E-07 6.87E-07						
% OF TOTAL	3.19E-09	5.72E-09	7.48E-09	3.02E-06	4.65E-09	2.99E-09
1.77E-07 5.33E-07 5.33E-07						
 CO-58	 1.34E-24	 2.05E-24	 2.00E-24	 3.47E-23	 1.92E-24	 1.48E-24
4.09E-24 6.37E-24 6.37E-24						
% OF TOTAL INHALATION	8.46E-20	1.04E-18	1.74E-20	1.23E-19	9.65E-19	1.18E-21
7.49E-20 6.02E-20 6.02E-20						
% OF TOTAL INTERNAL	3.74E-20	9.32E-20	4.27E-21	1.15E-19	8.34E-20	6.94E-22
4.28E-20 3.22E-20 3.22E-20						
% OF TOTAL	1.30E-20	2.45E-20	3.85E-21	9.86E-20	2.22E-20	6.76E-22
2.79E-20 2.50E-20 2.50E-20						
 CO-60	 1.38E-08	 5.67E-08	 5.23E-08	 1.05E-06	 5.01E-08	 4.04E-08
1.09E-07 1.80E-07 1.79E-07						
% OF TOTAL INHALATION	8.71E-04	2.88E-02	4.54E-04	3.71E-03	2.52E-02	3.23E-05
2.00E-03 1.70E-03 1.70E-03						
% OF TOTAL INTERNAL	3.85E-04	2.58E-03	1.12E-04	3.48E-03	2.18E-03	1.89E-05
1.14E-03 9.07E-04 9.07E-04						
% OF TOTAL	1.34E-04	6.79E-04	1.01E-04	2.98E-03	5.79E-04	1.84E-05
7.47E-04 7.04E-04 7.03E-04						

CS-134			6.05E-09	7.09E-09	6.61E-09	6.52E-09	8.00E-09	4.40E-09
7.44E-09	6.76E-09	6.76E-09						
% OF TOTAL INHALATION			3.81E-04	3.60E-03	5.74E-05	2.31E-05	4.03E-03	3.53E-06
1.36E-04	6.38E-05	6.38E-05						
% OF TOTAL INTERNAL			1.68E-04	3.23E-04	1.41E-05	2.17E-05	3.48E-04	2.07E-06
7.79E-05	3.41E-05	3.41E-05						
% OF TOTAL			5.86E-05	8.50E-05	1.27E-05	1.85E-05	9.25E-05	2.01E-06
5.09E-05	2.65E-05	2.65E-05						
CS-137			2.93E-05	3.20E-05	2.91E-05	3.27E-05	3.39E-05	2.03E-05
3.30E-05	3.11E-05	3.11E-05						
% OF TOTAL INHALATION			1.85E+00	1.62E+01	2.52E-01	1.16E-01	1.70E+01	1.63E-02
6.05E-01	2.93E-01	2.93E-01						
% OF TOTAL INTERNAL			8.16E-01	1.46E+00	6.20E-02	1.09E-01	1.47E+00	9.54E-03
3.46E-01	1.57E-01	1.57E-01						
% OF TOTAL			2.84E-01	3.83E-01	5.59E-02	9.30E-02	3.91E-01	9.29E-03
2.26E-01	1.22E-01	1.22E-01						
BA-137M			5.10E-11	2.37E-10	2.18E-10	7.22E-09	2.21E-10	1.65E-10
5.86E-10	1.13E-09	1.13E-09						
% OF TOTAL INHALATION			3.21E-06	1.20E-04	1.89E-06	2.56E-05	1.11E-04	1.32E-07
1.07E-05	1.07E-05	1.07E-05						
% OF TOTAL INTERNAL			1.42E-06	1.08E-05	4.65E-07	2.40E-05	9.59E-06	7.75E-08
6.14E-06	5.70E-06	5.70E-06						
% OF TOTAL			4.94E-07	2.84E-06	4.19E-07	2.05E-05	2.55E-06	7.54E-08
4.01E-06	4.42E-06	4.42E-06						
NP-237			4.28E-04	4.18E-05	2.71E-03	2.76E-04	4.17E-05	3.34E-02
1.47E-03	1.92E-03	1.92E-03						
% OF TOTAL INHALATION			2.70E+01	2.12E+01	2.35E+01	9.77E-01	2.10E+01	2.68E+01
2.69E+01	1.81E+01	1.81E+01						
% OF TOTAL INTERNAL			1.19E+01	1.90E+00	5.77E+00	9.16E-01	1.82E+00	1.57E+01
1.54E+01	9.68E+00	9.68E+00						
% OF TOTAL			4.14E+00	5.01E-01	5.20E+00	7.84E-01	4.82E-01	1.53E+01
1.00E+01	7.51E+00	7.51E+00						
PU-238			4.13E-04	4.09E-05	2.66E-03	1.25E-02	4.09E-05	3.29E-02
1.49E-03	3.37E-03	3.37E-03						
% OF TOTAL INHALATION			2.60E+01	2.08E+01	2.31E+01	4.44E+01	2.06E+01	2.63E+01
2.73E+01	3.18E+01	3.18E+01						
% OF TOTAL INTERNAL			1.15E+01	1.86E+00	5.68E+00	4.17E+01	1.78E+00	1.54E+01
1.56E+01	1.70E+01	1.70E+01						
% OF TOTAL			4.00E+00	4.90E-01	5.12E+00	3.57E+01	4.73E-01	1.50E+01
1.02E+01	1.32E+01	1.32E+01						
RU-103			2.33E-37	2.41E-37	2.44E-37	1.19E-35	2.00E-37	1.75E-37
9.47E-37	1.85E-36	1.85E-36						
% OF TOTAL INHALATION			1.47E-32	1.23E-31	2.12E-33	4.23E-32	1.01E-31	1.40E-34
1.74E-32	1.75E-32	1.75E-32						
% OF TOTAL INTERNAL			6.48E-33	1.10E-32	5.21E-34	3.97E-32	8.72E-33	8.21E-35
9.93E-33	9.36E-33	9.36E-33						
% OF TOTAL			2.25E-33	2.89E-33	4.69E-34	3.40E-32	2.32E-33	8.00E-35
6.48E-33	7.26E-33	7.26E-33						
RU-106			3.86E-11	5.32E-11	5.21E-11	2.97E-08	5.15E-11	4.72E-11
3.37E-10	3.70E-09	3.70E-09						
% OF TOTAL INHALATION			2.43E-06	2.70E-05	4.52E-07	1.05E-04	2.59E-05	3.78E-08
6.17E-06	3.49E-05	3.49E-05						
% OF TOTAL INTERNAL			1.07E-06	2.42E-06	1.11E-07	9.87E-05	2.24E-06	2.21E-08
3.53E-06	1.87E-05	1.87E-05						
% OF TOTAL			3.74E-07	6.37E-07	1.00E-07	8.45E-05	5.95E-07	2.16E-08
2.30E-06	1.45E-05	1.45E-05						
RH-106			1.46E-17	1.18E-16	1.10E-16	1.79E-13	1.09E-16	8.77E-17
2.74E-16	2.16E-14	2.16E-14						
% OF TOTAL INHALATION			9.20E-13	5.97E-11	9.58E-13	6.35E-10	5.46E-11	7.02E-14
5.02E-12	2.04E-10	2.04E-10						
% OF TOTAL INTERNAL			4.06E-13	5.35E-12	2.35E-13	5.95E-10	4.72E-12	4.11E-14
2.87E-12	1.09E-10	1.09E-10						
% OF TOTAL			1.41E-13	1.41E-12	2.12E-13	5.09E-10	1.25E-12	4.00E-14
1.87E-12	8.48E-11	8.47E-11						
SB-125			3.27E-10	3.84E-10	5.34E-10	1.90E-08	3.05E-10	1.54E-09
1.31E-09	2.93E-09	2.93E-09						

% OF TOTAL INHALATION	2.06E-05	1.95E-04	4.64E-06	6.73E-05	1.53E-04	1.24E-06
2.40E-05 2.77E-05 2.77E-05	9.11E-06	1.75E-05	1.14E-06	6.31E-05	1.33E-05	7.24E-07
% OF TOTAL INTERNAL	3.17E-06	4.60E-06	1.03E-06	5.41E-05	3.52E-06	7.05E-07
1.38E-05 1.48E-05 1.48E-05	1.83E-11	1.68E-11	2.60E-10	2.37E-09	9.56E-12	2.74E-09
% OF TOTAL	1.15E-06	1.15E-05				
8.97E-06 1.15E-05 1.15E-05	1.15E-06	8.52E-06	2.26E-06	8.41E-06	4.81E-06	2.20E-06
TE-125M	5.10E-07	7.63E-07	5.55E-07	7.89E-06	4.15E-07	1.29E-06
1.52E-10 4.51E-10 4.51E-10	1.77E-07	2.01E-07	5.00E-07	6.75E-06	1.10E-07	1.25E-06
% OF TOTAL INHALATION	1.77E-06	1.77E-06				
2.78E-06 4.26E-06 4.26E-06	1.38E-05	1.38E-05	1.67E-03	1.98E-05	1.38E-05	3.70E-03
% OF TOTAL INTERNAL	8.70E-01	7.01E+00	1.45E+01	7.01E-02	6.95E+00	2.97E+00
1.59E-06 2.28E-06 2.28E-06	3.84E-01	6.28E-01	3.57E+00	6.57E-02	6.00E-01	1.74E+00
% OF TOTAL	1.34E-01	1.65E-01	3.22E+00	5.63E-02	1.60E-01	1.69E+00
1.04E-06 1.77E-06 1.77E-06	1.34E-01	1.65E-01				
SR-90	3.12E-09	3.12E-09	8.42E-08	6.11E-05	3.12E-09	8.30E-08
1.60E-05 3.25E-04 3.25E-04	1.97E-04	1.58E-03	7.30E-04	2.16E-01	1.57E-03	6.65E-05
% OF TOTAL INHALATION	3.93E-01	1.30E-01	1.30E-01			
2.93E-01 3.07E+00 3.07E+00	8.68E-05	1.42E-04	1.79E-04	2.03E-01	1.36E-04	3.89E-05
% OF TOTAL INTERNAL	1.10E-01	1.27E+00	1.27E+00			
1.68E-01 1.64E+00 1.64E+00	3.02E-05	3.74E-05	1.62E-04	1.74E-01	3.60E-05	3.79E-05
% OF TOTAL	1.47E-01	5.40E-02	5.40E-02			
Y-90	6.52E-12	6.52E-12	6.52E-12	2.63E-09	1.69E-10	6.52E-12
2.14E-05 1.38E-05 1.38E-05	4.11E-07	3.31E-06	5.66E-08	9.32E-06	8.48E-05	5.22E-09
% OF TOTAL INHALATION	3.93E-01	1.30E-01	1.30E-01			
3.93E-01 3.07E+00 3.07E+00	1.81E-07	2.97E-07	1.39E-08	8.74E-06	7.33E-06	3.06E-09
% OF TOTAL INTERNAL	2.25E-01	6.96E-02	6.96E-02			
2.25E-01 6.96E-02 6.96E-02	6.31E-08	7.81E-08	1.25E-08	7.48E-06	1.95E-06	2.98E-09
% OF TOTAL	1.47E-01	5.40E-02	5.40E-02			
1.02E-06 1.79E-06 1.79E-06	6.31E-08	7.81E-08	1.25E-08	7.48E-06	1.95E-06	2.98E-09
6.64E-07 1.39E-06 1.39E-06	6.31E-08	7.81E-08	1.25E-08	7.48E-06	1.95E-06	2.98E-09
TC-99	6.55E-08	6.64E-08	1.71E-06	7.31E-03	6.55E-08	2.70E-05
9.72E-11 3.54E-10 3.54E-10	4.13E-03	3.37E-02	1.49E-02	2.59E+01	3.30E-02	2.16E-02
% OF TOTAL INHALATION	1.78E-06	3.34E-06	3.34E-06			
1.78E-06 3.34E-06 3.34E-06	1.82E-03	3.02E-03	3.65E-03	2.43E+01	2.85E-03	1.27E-02
% OF TOTAL INTERNAL	1.02E-06	1.79E-06	1.79E-06			
1.02E-06 1.79E-06 1.79E-06	6.34E-04	7.96E-04	3.29E-03	2.08E+01	7.57E-04	1.23E-02
% OF TOTAL	6.64E-07	1.39E-06	1.39E-06			
U-234	6.55E-08	6.64E-08	1.71E-06	7.31E-03	6.55E-08	2.70E-05
2.50E-06 8.79E-04 8.79E-04	4.13E-03	3.37E-02	1.49E-02	2.59E+01	3.30E-02	2.16E-02
% OF TOTAL INHALATION	4.59E-02	8.30E+00	8.30E+00			
4.59E-02 8.30E+00 8.30E+00	1.82E-03	3.02E-03	3.65E-03	2.43E+01	2.85E-03	1.27E-02
% OF TOTAL INTERNAL	2.62E-02	4.44E+00	4.44E+00			
2.62E-02 4.44E+00 4.44E+00	6.34E-04	7.96E-04	3.29E-03	2.08E+01	7.57E-04	1.23E-02
% OF TOTAL	1.71E-02	3.44E+00	3.44E+00			
U-238	6.55E-08	6.64E-08	1.71E-06	7.31E-03	6.55E-08	2.70E-05
3.04E-06 9.06E-04 9.06E-04	4.68E-03	4.39E-02	1.92E-02	2.67E+01	4.05E-02	2.19E-02
% OF TOTAL INHALATION	5.57E-02	8.56E+00	8.56E+00			
5.57E-02 8.56E+00 8.56E+00	2.07E-03	3.93E-03	4.72E-03	2.50E+01	3.50E-03	1.28E-02
% OF TOTAL INTERNAL	3.19E-02	4.58E+00	4.58E+00			
3.19E-02 4.58E+00 4.58E+00	7.19E-04	1.04E-03	4.26E-03	2.14E+01	9.31E-04	1.25E-02
% OF TOTAL	2.08E-02	3.55E+00	3.55E+00			
TOTAL	1.59E-03	1.97E-04	1.15E-02	2.82E-02	1.99E-04	1.25E-01
5.46E-03 1.06E-02 1.06E-02	1	INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES				
		INDIVIDUAL DOSE EQ. RATE (REM/YEAR)				

0\*\*\* FOR PATHWAY:AIR IMMERSION

0 ORGAN :	GONADS	BREAST	R MAR	LUNGS	THYROID	ENDOST
RMNDR EFFEC WT. SUM						
ONUCLIDES						

AM-241	8.31E-11	1.06E-10	2.70E-11	5.00E-11	7.94E-11	9.19E-11
4.89E-11	6.57E-11	6.57E-11				
% OF TOTAL AIR IMMERSION						
1.44E-02	1.73E-02	1.73E-02				
% OF TOTAL EXTERNAL						
9.63E-07	1.15E-06	1.15E-06				
% OF TOTAL						
3.35E-07	2.58E-07	2.58E-07				
CE-144	4.76E-15	5.51E-15	2.74E-15	3.24E-15	4.63E-15	5.23E-15
3.18E-15	3.99E-15	3.98E-15				
% OF TOTAL AIR IMMERSION						
9.39E-07	1.05E-06	1.05E-06				
% OF TOTAL EXTERNAL						
6.26E-11	6.97E-11	6.97E-11				
% OF TOTAL						
2.18E-11	1.56E-11	1.56E-11				
CO-58	4.27E-25	3.85E-25	3.26E-25	3.21E-25	4.03E-25	3.58E-25
3.25E-25	3.63E-25	3.62E-25				
% OF TOTAL AIR IMMERSION						
9.59E-17	9.51E-17	9.52E-17				
% OF TOTAL EXTERNAL						
6.39E-21	6.34E-21	6.34E-21				
% OF TOTAL						
2.22E-21	1.42E-21	1.42E-21				
CO-60	1.55E-09	1.39E-09	1.19E-09	1.18E-09	1.47E-09	1.26E-09
1.20E-09	1.32E-09	1.32E-09				
% OF TOTAL AIR IMMERSION						
3.53E-01	3.47E-01	3.47E-01				
% OF TOTAL EXTERNAL						
2.35E-05	2.31E-05	2.31E-05				
% OF TOTAL						
8.18E-06	5.18E-06	5.18E-06				
CS-134	1.75E-10	1.59E-10	1.34E-10	1.31E-10	1.65E-10	1.48E-10
1.32E-10	1.48E-10	1.48E-10				
% OF TOTAL AIR IMMERSION						
3.91E-02	3.89E-02	3.89E-02				
% OF TOTAL EXTERNAL						
2.60E-06	2.59E-06	2.59E-06				
% OF TOTAL						
9.05E-07	5.81E-07	5.81E-07				
CS-137	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL AIR IMMERSION						
.00E+00	.00E+00	.00E+00				
% OF TOTAL EXTERNAL						
.00E+00	.00E+00	.00E+00				
% OF TOTAL						
.00E+00	.00E+00	.00E+00				
BA-137M	4.47E-07	4.07E-07	3.41E-07	3.35E-07	4.20E-07	3.79E-07
3.37E-07	3.79E-07	3.79E-07				
% OF TOTAL AIR IMMERSION						
9.96E+01	9.96E+01	9.96E+01				
% OF TOTAL EXTERNAL						
6.64E-03	6.63E-03	6.63E-03				
% OF TOTAL						
2.31E-03	1.49E-03	1.49E-03				
NP-237	6.51E-11	8.08E-11	3.26E-11	4.28E-11	6.28E-11	7.28E-11
4.15E-11	5.40E-11	5.40E-11				
% OF TOTAL AIR IMMERSION						
1.22E-02	1.42E-02	1.42E-02				
% OF TOTAL EXTERNAL						
8.16E-07	9.44E-07	9.44E-07				
% OF TOTAL						
2.84E-07	2.12E-07	2.11E-07				
PU-238	5.57E-13	2.38E-12	6.98E-14	1.55E-13	2.26E-13	2.76E-13
1.15E-13	5.73E-13	5.73E-13				

% OF TOTAL AIR IMMERSION						
3.40E-05	1.50E-04	1.51E-04	1.24E-04	5.83E-04	2.04E-05	4.61E-05
% OF TOTAL EXTERNAL			8.26E-09	3.88E-08	1.36E-09	3.07E-09
2.27E-09	1.00E-08	1.00E-08	5.39E-09	2.86E-08	1.34E-10	4.42E-10
% OF TOTAL			7.88E-10	2.25E-09	2.25E-09	2.61E-09
RU-103			7.14E-38	6.64E-38	5.44E-38	5.32E-38
5.31E-38	6.05E-38	6.05E-38	1.59E-29	1.62E-29	1.59E-29	1.58E-29
% OF TOTAL AIR IMMERSION			1.06E-33	1.08E-33	1.06E-33	1.05E-33
1.57E-29	1.59E-29	1.59E-29	6.91E-34	7.95E-34	1.05E-34	1.51E-34
% OF TOTAL EXTERNAL			1.04E-33	1.06E-33	1.06E-33	1.04E-33
1.04E-33	1.06E-33	1.06E-33	3.63E-34	2.37E-34	2.37E-34	7.64E-34
% OF TOTAL			6.91E-34	7.95E-34	1.05E-34	1.51E-34
RU-106			.00E+00	.00E+00	.00E+00	.00E+00
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL AIR IMMERSION			.00E+00	.00E+00	.00E+00	.00E+00
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL EXTERNAL			.00E+00	.00E+00	.00E+00	.00E+00
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL			.00E+00	.00E+00	.00E+00	.00E+00
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
RH-106			1.19E-12	1.09E-12	9.05E-13	8.88E-13
8.91E-13	1.01E-12	1.01E-12	2.64E-04	2.66E-04	2.64E-04	2.64E-04
% OF TOTAL AIR IMMERSION			1.76E-08	1.77E-08	1.76E-08	1.75E-08
2.63E-04	2.64E-04	2.64E-04	1.15E-08	1.30E-08	1.74E-09	1.75E-08
% OF TOTAL EXTERNAL			1.75E-08	1.76E-08	1.75E-08	1.75E-08
1.75E-08	1.76E-08	1.76E-08	6.09E-09	3.94E-09	3.94E-09	4.64E-10
% OF TOTAL			6.09E-09	3.94E-09	3.94E-09	3.94E-09
SB-125			7.53E-11	7.08E-11	5.68E-11	5.58E-11
5.58E-11	6.38E-11	6.38E-11	1.68E-02	1.73E-02	1.66E-02	1.66E-02
% OF TOTAL AIR IMMERSION			1.12E-06	1.15E-06	1.11E-06	1.10E-06
1.65E-02	1.67E-02	1.67E-02	7.29E-07	8.48E-07	1.09E-07	1.59E-07
% OF TOTAL EXTERNAL			1.12E-06	1.15E-06	1.11E-06	1.10E-06
1.10E-06	1.12E-06	1.12E-06	3.81E-07	2.50E-07	2.50E-07	3.01E-08
% OF TOTAL			3.81E-07	2.50E-07	2.50E-07	2.50E-07
TE-125M			5.17E-13	8.41E-13	6.48E-14	1.66E-13
1.83E-13	3.57E-13	3.57E-13	1.15E-04	2.06E-04	1.89E-05	4.92E-05
% OF TOTAL AIR IMMERSION			7.67E-09	1.37E-08	1.26E-09	3.27E-09
5.39E-05	9.36E-05	9.36E-05	5.00E-09	1.01E-08	1.25E-10	4.71E-10
% OF TOTAL EXTERNAL			5.00E-09	1.01E-08	1.25E-10	3.91E-09
3.60E-09	6.24E-09	6.24E-09	1.25E-09	1.40E-09	1.40E-09	1.31E-10
% OF TOTAL			1.25E-09	1.40E-09	1.40E-09	1.40E-09
SR-90			.00E+00	.00E+00	.00E+00	.00E+00
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL AIR IMMERSION			.00E+00	.00E+00	.00E+00	.00E+00
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL EXTERNAL			.00E+00	.00E+00	.00E+00	.00E+00
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL			.00E+00	.00E+00	.00E+00	.00E+00
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
Y-90			.00E+00	.00E+00	.00E+00	.00E+00
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL AIR IMMERSION			.00E+00	.00E+00	.00E+00	.00E+00
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL EXTERNAL			.00E+00	.00E+00	.00E+00	.00E+00
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL			.00E+00	.00E+00	.00E+00	.00E+00
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
TC-99			1.61E-17	1.90E-17	8.04E-18	1.10E-17
1.06E-17	1.34E-17	1.34E-17	3.59E-09	4.65E-09	2.34E-09	3.26E-09
% OF TOTAL AIR IMMERSION			3.12E-09	3.52E-09	3.52E-09	3.81E-09
3.12E-09	3.52E-09	3.52E-09	3.81E-09	5.03E-09	5.03E-09	5.03E-09

% OF TOTAL EXTERNAL								
2.09E-13	2.34E-13	2.34E-13	2.39E-13	3.09E-13	1.57E-13	2.17E-13	2.53E-13	3.34E-13
% OF TOTAL								
7.25E-14	5.25E-14	5.25E-14	1.56E-13	2.28E-13	1.54E-14	3.12E-14	1.86E-13	8.74E-15
U-234								
3.13E-13	6.17E-13	6.17E-13	6.74E-13	1.69E-12	2.29E-13	3.40E-13	5.03E-13	5.88E-13
% OF TOTAL AIR IMMERSION								
9.23E-05	1.62E-04	1.62E-04	1.50E-04	4.14E-04	6.67E-05	1.01E-04	1.19E-04	1.55E-04
% OF TOTAL EXTERNAL								
6.15E-09	1.08E-08	1.08E-08	1.00E-08	2.75E-08	4.46E-09	6.72E-09	7.91E-09	1.03E-08
% OF TOTAL								
2.14E-09	2.42E-09	2.42E-09	6.52E-09	2.03E-08	4.39E-10	9.67E-10	5.81E-09	2.69E-10
U-238								
2.16E-13	4.86E-13	4.86E-13	5.15E-13	1.49E-12	1.36E-13	2.40E-13	3.62E-13	4.33E-13
% OF TOTAL AIR IMMERSION								
6.36E-05	1.27E-04	1.27E-04	1.15E-04	3.64E-04	3.96E-05	7.14E-05	8.58E-05	1.14E-04
% OF TOTAL EXTERNAL								
4.24E-09	8.49E-09	8.49E-09	7.64E-09	2.42E-08	2.64E-09	4.75E-09	5.70E-09	7.56E-09
% OF TOTAL								
1.47E-09	1.90E-09	1.90E-09	4.98E-09	1.78E-08	2.61E-10	6.84E-10	4.19E-09	1.98E-10
TOTAL								
3.39E-07	3.81E-07	3.81E-07	4.49E-07	4.09E-07	3.43E-07	3.37E-07	4.22E-07	3.80E-07

1 INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES  
INDIVIDUAL DOSE EQ. RATE (MREM/YEAR)

0\*\*\* FOR PATHWAY: GROUND SURFACE

0 ORGAN :	WT.	SUM	GONADS	BREAST	R MAR	LUNGS	THYROID	ENDOST
RMNDR	EFFEC							
ONUCLIDES								
AM-241								
1.88E-06	2.79E-06	2.79E-06	3.44E-06	5.39E-06	1.05E-06	1.95E-06	3.08E-06	3.59E-06
% OF TOTAL GROUND SURFACE								
3.70E-02	4.89E-02	4.89E-02	5.11E-02	8.77E-02	2.04E-02	3.86E-02	4.86E-02	6.27E-02
% OF TOTAL EXTERNAL								
3.70E-02	4.89E-02	4.89E-02	5.11E-02	8.77E-02	2.04E-02	3.86E-02	4.85E-02	6.27E-02
% OF TOTAL								
1.29E-02	1.09E-02	1.09E-02	3.33E-02	6.46E-02	2.01E-03	5.55E-03	3.56E-02	1.64E-03
CE-144								
2.69E-12	3.42E-12	3.42E-12	4.13E-12	4.86E-12	2.26E-12	2.73E-12	3.96E-12	4.44E-12
% OF TOTAL GROUND SURFACE								
5.30E-08	5.98E-08	5.98E-08	6.12E-08	7.89E-08	4.41E-08	5.40E-08	6.24E-08	7.75E-08
% OF TOTAL EXTERNAL								
5.30E-08	5.98E-08	5.98E-08	6.12E-08	7.89E-08	4.41E-08	5.40E-08	6.24E-08	7.75E-08
% OF TOTAL								
1.84E-08	1.34E-08	1.34E-08	3.99E-08	5.82E-08	4.34E-09	7.77E-09	4.58E-08	2.03E-09
CO-58								
5.79E-23	6.47E-23	6.47E-23	7.62E-23	6.88E-23	5.84E-23	5.74E-23	7.20E-23	6.40E-23
% OF TOTAL GROUND SURFACE								
1.14E-18	1.13E-18	1.13E-18	1.13E-18	1.12E-18	1.14E-18	1.13E-18	1.13E-18	1.12E-18
% OF TOTAL EXTERNAL								
1.14E-18	1.13E-18	1.13E-18	1.13E-18	1.12E-18	1.14E-18	1.13E-18	1.13E-18	1.12E-18
% OF TOTAL								
3.96E-19	2.54E-19	2.54E-19	7.37E-19	8.24E-19	1.12E-19	1.63E-19	8.32E-19	2.92E-20
CO-60								
4.54E-06	5.02E-06	5.02E-06	5.89E-06	5.28E-06	4.53E-06	4.49E-06	5.60E-06	4.80E-06
% OF TOTAL GROUND SURFACE								
8.94E-02	8.78E-02	8.79E-02	8.75E-02	8.59E-02	8.83E-02	8.87E-02	8.81E-02	8.38E-02
% OF TOTAL EXTERNAL								
8.94E-02	8.78E-02	8.79E-02	8.75E-02	8.59E-02	8.83E-02	8.87E-02	8.81E-02	8.38E-02
% OF TOTAL								
3.11E-02	1.97E-02	1.97E-02	5.70E-02	6.33E-02	8.70E-03	1.28E-02	6.47E-02	2.19E-03
CS-134								
2.40E-07	2.70E-07	2.70E-07	3.18E-07	2.88E-07	2.43E-07	2.39E-07	2.99E-07	2.68E-07

% OF TOTAL GROUND SURFACE						
4.73E-03	4.72E-03	4.72E-03	4.71E-03	4.69E-03	4.74E-03	4.72E-03
% OF TOTAL EXTERNAL						
4.73E-03	4.72E-03	4.72E-03	4.71E-03	4.69E-03	4.74E-03	4.72E-03
% OF TOTAL						
1.64E-03	1.06E-03	1.06E-03	3.07E-03	3.45E-03	4.67E-04	6.79E-04
CS-137			.00E+00	.00E+00	.00E+00	.00E+00
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL GROUND SURFACE						
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL EXTERNAL						
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL						
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
BA-137M						
5.07E-03	5.71E-03	5.71E-03	6.73E-03	6.13E-03	5.12E-03	5.05E-03
% OF TOTAL GROUND SURFACE						
9.98E+01	9.98E+01	9.98E+01	9.98E+01	9.97E+01	9.99E+01	9.98E+01
% OF TOTAL EXTERNAL						
9.98E+01	9.98E+01	9.98E+01	9.98E+01	9.97E+01	9.99E+01	9.98E+01
% OF TOTAL						
3.47E+01	2.24E+01	2.24E+01	6.51E+01	7.35E+01	9.84E+00	1.44E+01
NP-237						
1.45E-06	2.17E-06	2.17E-06	2.56E-06	4.24E-06	1.11E-06	1.51E-06
% OF TOTAL GROUND SURFACE						
2.85E-02	3.79E-02	3.79E-02	3.79E-02	6.90E-02	2.16E-02	2.99E-02
% OF TOTAL EXTERNAL						
2.85E-02	3.79E-02	3.79E-02	3.79E-02	6.90E-02	2.16E-02	2.99E-02
% OF TOTAL						
9.90E-03	8.50E-03	8.50E-03	2.47E-02	5.08E-02	2.13E-03	4.30E-03
PU-238						
1.12E-08	1.24E-07	1.24E-07	1.10E-07	5.94E-07	6.59E-09	1.79E-08
% OF TOTAL GROUND SURFACE						
2.20E-04	2.18E-03	2.18E-03	1.63E-03	9.66E-03	1.28E-04	3.53E-04
% OF TOTAL EXTERNAL						
2.20E-04	2.18E-03	2.18E-03	1.63E-03	9.65E-03	1.28E-04	3.53E-04
% OF TOTAL						
7.64E-05	4.88E-04	4.88E-04	1.07E-03	7.11E-03	1.27E-05	5.08E-05
RU-103						
5.57E-36	6.36E-36	6.36E-36	7.51E-36	6.99E-36	5.71E-36	5.61E-36
% OF TOTAL GROUND SURFACE						
1.10E-31	1.11E-31	1.11E-31	1.12E-31	1.14E-31	1.11E-31	1.09E-31
% OF TOTAL EXTERNAL						
1.10E-31	1.11E-31	1.11E-31	1.12E-31	1.14E-31	1.11E-31	1.09E-31
% OF TOTAL						
3.81E-32	2.49E-32	2.49E-32	7.27E-32	8.37E-32	1.10E-32	1.60E-32
RU-106						
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL GROUND SURFACE						
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL EXTERNAL						
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
% OF TOTAL						
.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
RH-106						
8.27E-10	9.34E-10	9.34E-10	1.10E-09	1.01E-09	8.41E-10	8.24E-10
% OF TOTAL GROUND SURFACE						
1.63E-05	1.63E-05	1.63E-05	1.63E-05	1.64E-05	1.64E-05	1.63E-05
% OF TOTAL EXTERNAL						
1.63E-05	1.63E-05	1.63E-05	1.63E-05	1.64E-05	1.64E-05	1.63E-05
% OF TOTAL						
5.66E-06	3.66E-06	3.66E-06	1.07E-05	1.21E-05	1.62E-06	2.34E-06
SB-125						
1.40E-07	1.61E-07	1.61E-07	1.90E-07	1.81E-07	1.43E-07	1.40E-07
% OF TOTAL GROUND SURFACE						
2.76E-03	2.81E-03	2.81E-03	2.82E-03	2.94E-03	2.78E-03	2.76E-03

% OF TOTAL EXTERNAL	2.82E-03	2.94E-03	2.78E-03	2.76E-03	2.78E-03	2.89E-03
2.76E-03 2.81E-03 2.81E-03						
% OF TOTAL	1.84E-03	2.16E-03	2.74E-04	3.98E-04	2.04E-03	7.57E-05
9.58E-04 6.30E-04 6.30E-04						
TE-125M	2.74E-09	4.45E-09	3.30E-10	8.70E-10	1.78E-09	1.51E-09
9.64E-10 1.88E-09 1.88E-09						
% OF TOTAL GROUND SURFACE	4.07E-05	7.24E-05	6.43E-06	1.72E-05	2.81E-05	2.63E-05
1.90E-05 3.30E-05 3.30E-05						
% OF TOTAL EXTERNAL	4.06E-05	7.24E-05	6.43E-06	1.72E-05	2.81E-05	2.63E-05
1.90E-05 3.30E-05 3.30E-05						
% OF TOTAL	2.65E-05	5.33E-05	6.34E-07	2.47E-06	2.06E-05	6.88E-07
6.59E-06 7.39E-06 7.39E-06						
SR-90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
.00E+00 .00E+00 .00E+00						
% OF TOTAL GROUND SURFACE	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
.00E+00 .00E+00 .00E+00						
% OF TOTAL EXTERNAL	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
.00E+00 .00E+00 .00E+00						
% OF TOTAL	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
.00E+00 .00E+00 .00E+00						
Y-90	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
.00E+00 .00E+00 .00E+00						
% OF TOTAL GROUND SURFACE	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
.00E+00 .00E+00 .00E+00						
% OF TOTAL EXTERNAL	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
.00E+00 .00E+00 .00E+00						
% OF TOTAL	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00	.00E+00
.00E+00 .00E+00 .00E+00						
TC-99	5.40E-13	6.37E-13	2.70E-13	3.67E-13	5.40E-13	6.42E-13
3.55E-13 4.49E-13 4.49E-13						
% OF TOTAL GROUND SURFACE	8.02E-09	1.04E-08	5.26E-09	7.25E-09	8.51E-09	1.12E-08
6.99E-09 7.85E-09 7.85E-09						
% OF TOTAL EXTERNAL	8.02E-09	1.04E-08	5.26E-09	7.24E-09	8.50E-09	1.12E-08
6.99E-09 7.85E-09 7.85E-09						
% OF TOTAL	5.23E-09	7.63E-09	5.18E-10	1.04E-09	6.24E-09	2.94E-10
2.43E-09 1.76E-09 1.76E-09						
U-234	8.31E-08	4.22E-07	1.07E-08	2.04E-08	2.71E-08	3.47E-08
1.47E-08 9.41E-08 9.40E-08						
% OF TOTAL GROUND SURFACE	1.23E-03	6.86E-03	2.10E-04	4.03E-04	4.27E-04	6.06E-04
2.90E-04 1.65E-03 1.64E-03						
% OF TOTAL EXTERNAL	1.23E-03	6.86E-03	2.10E-04	4.03E-04	4.27E-04	6.06E-04
2.90E-04 1.64E-03 1.64E-03						
% OF TOTAL	8.04E-04	5.05E-03	2.07E-05	5.80E-05	3.13E-04	1.58E-05
1.01E-04 3.69E-04 3.69E-04						
U-238	7.57E-08	4.04E-07	7.57E-09	1.66E-08	2.14E-08	2.85E-08
1.13E-08 8.74E-08 8.74E-08						
% OF TOTAL GROUND SURFACE	1.12E-03	6.58E-03	1.47E-04	3.27E-04	3.37E-04	4.99E-04
2.23E-04 1.53E-03 1.53E-03						
% OF TOTAL EXTERNAL	1.12E-03	6.58E-03	1.47E-04	3.27E-04	3.37E-04	4.98E-04
2.23E-04 1.53E-03 1.53E-03						
% OF TOTAL	7.32E-04	4.85E-03	1.45E-05	4.71E-05	2.48E-04	1.30E-05
7.74E-05 3.43E-04 3.42E-04						
TOTAL	6.74E-03	6.15E-03	5.13E-03	5.06E-03	6.35E-03	5.73E-03
5.08E-03 5.72E-03 5.72E-03						

1 INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES  
INDIVIDUAL DOSE EQ. RATE (REM/YEAR)

0\*\*\* FOR ALL PATHWAYS:

0 ORGAN :	GONADS	BREAST	R MAR	LUNGS	THYROID	ENDOST
RMNDR EFFEC WT. SUM						
ONUCLIDES						
AM-241	7.57E-04	7.84E-05	4.76E-03	4.73E-04	7.61E-05	5.87E-02
2.60E-03 3.37E-03 3.37E-03						

% OF TOTAL			7.32E+00	9.40E-01	9.15E+00	1.35E+00	8.79E-01	2.68E+01
1.78E+01	1:32E+01	1.32E+01						
CE-144			5.26E-12	5.48E-12	7.18E-12	1.06E-09	4.43E-12	1.25E-11
2.44E-10	2.04E-10	2.04E-10						
% OF TOTAL			5.09E-08	6.56E-08	1.38E-08	3.03E-06	5.12E-08	5.70E-09
1.67E-06	8.01E-07	8.01E-07						
CO-58			1.09E-22	8.63E-23	7.62E-23	1.03E-22	8.87E-23	7.43E-23
1.06E-22	9.83E-23	9.82E-23						
% OF TOTAL			1.05E-18	1.03E-18	1.46E-19	2.94E-19	1.02E-18	3.39E-20
7.23E-19	3.85E-19	3.85E-19						
CO-60			6.38E-06	5.80E-06	5.01E-06	5.98E-06	6.15E-06	5.12E-06
5.37E-06	5.73E-06	5.73E-06						
% OF TOTAL			6.17E-02	6.94E-02	9.62E-03	1.70E-02	7.10E-02	2.34E-03
3.67E-02	2.25E-02	2.25E-02						
CS-134			5.91E-07	6.08E-07	5.41E-07	5.15E-07	6.60E-07	4.66E-07
5.75E-07	5.72E-07	5.72E-07						
% OF TOTAL			5.72E-03	7.28E-03	1.04E-03	1.46E-03	7.62E-03	2.13E-04
3.94E-03	2.24E-03	2.24E-03						
CS-137			1.60E-03	1.74E-03	1.59E-03	1.62E-03	1.85E-03	1.11E-03
1.80E-03	1.67E-03	1.67E-03						
% OF TOTAL			1.55E+01	2.09E+01	3.05E+00	4.59E+00	2.13E+01	5.06E-01
1.23E+01	6.56E+00	6.56E+00						
BA-137M			6.73E-03	6.13E-03	5.12E-03	5.05E-03	6.34E-03	5.72E-03
5.07E-03	5.71E-03	5.71E-03						
% OF TOTAL			6.51E+01	7.35E+01	9.84E+00	1.44E+01	7.33E+01	2.61E+00
3.47E+01	2.24E+01	2.24E+01						
NP-237			4.66E-04	4.95E-05	2.93E-03	2.81E-04	4.74E-05	3.62E-02
1.59E-03	2.07E-03	2.07E-03						
% OF TOTAL			4.51E+00	5.93E-01	5.63E+00	7.99E-01	5.48E-01	1.65E+01
1.09E+01	8.13E+00	8.13E+00						
PU-238			4.92E-04	4.92E-05	3.16E-03	1.26E-02	4.86E-05	3.90E-02
1.77E-03	3.72E-03	3.72E-03						
% OF TOTAL			4.76E+00	5.89E-01	6.08E+00	3.57E+01	5.62E-01	1.78E+01
1.21E+01	1.46E+01	1.46E+01						
RU-103			1.03E-35	7.85E-36	6.73E-36	1.79E-35	7.52E-36	7.15E-36
1.55E-35	1.18E-35	1.18E-35						
% OF TOTAL			9.92E-32	9.41E-32	1.29E-32	5.10E-32	8.69E-32	3.27E-33
1.06E-31	4.62E-32	4.62E-32						
RU-106			4.97E-10	4.65E-10	4.67E-10	3.01E-08	4.58E-10	4.45E-10
5.95E-09	5.68E-09	5.68E-09						
% OF TOTAL			4.81E-06	5.57E-06	8.97E-07	8.57E-05	5.30E-06	2.03E-07
4.07E-05	2.23E-05	2.23E-05						
RH-106			1.10E-09	1.01E-09	8.42E-10	8.25E-10	1.03E-09	9.44E-10
8.30E-10	9.36E-10	9.36E-10						
% OF TOTAL			1.07E-05	1.21E-05	1.62E-06	2.35E-06	1.19E-05	4.31E-07
5.68E-06	3.67E-06	3.67E-06						
SB-125			1.95E-07	1.82E-07	1.45E-07	1.59E-07	1.77E-07	1.74E-07
1.57E-07	1.70E-07	1.70E-07						
% OF TOTAL			1.89E-03	2.18E-03	2.79E-04	4.53E-04	2.05E-03	7.96E-05
1.08E-03	6.68E-04	6.68E-04						
TE-125M			3.32E-09	4.68E-09	5.84E-09	3.44E-09	1.98E-09	6.05E-08
7.15E-09	6.67E-09	6.67E-09						
% OF TOTAL			3.21E-05	5.61E-05	1.12E-05	9.78E-06	2.29E-05	2.77E-05
4.89E-05	2.61E-05	2.61E-05						
SR-90			2.81E-04	2.81E-04	3.43E-02	2.87E-04	2.81E-04	7.59E-02
1.08E-03	6.87E-03	6.88E-03						
% OF TOTAL			2.72E+00	3.37E+00	6.59E+01	8.17E-01	3.25E+00	3.47E+01
7.38E+00	2.69E+01	2.70E+01						

Y-90				3.89E-09	3.81E-09	1.03E-07	6.11E-05	3.80E-09	1.01E-07
5.06E-04	1.59E-04	1.59E-04		3.77E-05	4.56E-05	1.97E-04	1.74E-01	4.39E-05	4.63E-05
% OF TOTAL									
3.46E+00	6.24E-01	6.24E-01							
TC-99				6.62E-09	6.62E-09	6.62E-09	9.25E-09	1.71E-07	6.62E-09
1.06E-07	4.17E-08	4.17E-08		6.41E-05	7.93E-05	1.27E-05	2.63E-05	1.98E-03	3.03E-06
% OF TOTAL									
7.26E-04	1.64E-04	1.64E-04							
U-234				2.69E-06	3.03E-06	6.96E-05	7.31E-03	2.63E-06	1.10E-03
9.45E-05	9.48E-04	9.48E-04		2.60E-02	3.63E-02	1.34E-01	2.08E+01	3.04E-02	5.02E-01
% OF TOTAL									
6.46E-01	3.72E+00	3.72E+00							
U-238				2.80E-06	3.14E-06	8.53E-05	7.53E-03	2.75E-06	1.10E-03
9.84E-05	9.78E-04	9.78E-04		2.71E-02	3.76E-02	1.64E-01	2.14E+01	3.17E-02	5.04E-01
% OF TOTAL									
6.73E-01	3.83E+00	3.83E+00							
TOTAL				1.03E-02	8.35E-03	5.21E-02	3.52E-02	8.65E-03	2.19E-01
1.46E-02	2.55E-02	2.55E-02							
1				INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES					
				INDIVIDUAL DOSE EQ. RATE (REM/YEAR)					

0\*\*\*FOR ORGAN :GONADS

NUCLIDES				AM-241	CE-144	CO-58	CO-60	CS-134	CS-137	BA-
137M	NP-237	PU-238	RU-103							
				RU-106	RH-106	SB-125	TE-125M	SR-90	Y-90	
TC-99	U-234	U-238		TOTAL						
PATHWAYS										
INGESTION				5.01E-05	7.96E-13	3.06E-23	4.69E-07	2.67E-07	1.57E-03	
3.55E-09	3.54E-05	7.84E-05		2.44E-36						
				4.58E-10	2.03E-15	4.50E-09	5.59E-10	2.68E-04	7.73E-10	
6.62E-09	2.54E-06	2.65E-06		2.01E-03						
% OF INTERNAL				6.65E+00	7.07E+01	9.58E+01	9.71E+01	9.78E+01	9.82E+01	
9.86E+01	7.64E+00	1.59E+01		9.13E+01						
				9.22E+01	9.93E+01	9.32E+01	9.68E+01	9.51E+01	1.98E+01	
9.99E+01	9.75E+01	9.73E+01		5.58E+01						
% OF ALL PATHWAYS				6.62E+00	1.51E+01	2.82E+01	7.35E+00	4.52E+01	9.82E+01	
5.27E-05	7.60E+00	1.59E+01		2.38E+01						
				9.22E+01	1.84E-04	2.31E+00	1.68E+01	9.51E+01	1.98E+01	
9.99E+01	9.45E+01	9.46E+01		1.94E+01						
INHALATION				7.03E-04	3.30E-13	1.34E-24	1.38E-08	6.05E-09	2.93E-05	
5.10E-11	4.28E-04	4.13E-04		2.33E-37						
				3.86E-11	1.46E-17	3.27E-10	1.83E-11	1.38E-05	3.12E-09	
6.52E-12	6.55E-08	7.43E-08		1.59E-03						
% OF INTERNAL				9.33E+01	2.93E+01	4.20E+00	2.87E+00	2.22E+00	1.83E+00	
1.42E+00	9.24E+01	8.41E+01		8.73E+00						
				7.78E+00	7.14E-01	6.79E+00	3.17E+00	4.91E+00	8.02E+01	
9.85E-02	2.52E+00	2.73E+00		4.42E+01						
% OF ALL PATHWAYS				9.29E+01	6.27E+00	1.24E+00	2.17E-01	1.02E+00	1.83E+00	
7.59E-07	9.19E+01	8.40E+01		2.27E+00						
				7.78E+00	1.33E-06	1.68E-01	5.52E-01	4.91E+00	8.02E+01	
9.85E-02	2.44E+00	2.66E+00		1.54E+01						
AIR IMMERSION				8.31E-11	4.76E-15	4.27E-25	1.55E-09	1.75E-10	.00E+00	
4.47E-07	6.51E-11	5.57E-13		7.14E-38						
				.00E+00	1.19E-12	7.53E-11	5.17E-13	.00E+00	.00E+00	
1.61E-17	6.74E-13	5.15E-13		4.49E-07						
% OF EXTERNAL				2.42E-03	1.15E-01	5.58E-01	2.63E-02	5.49E-02	.00E+00	
6.65E-03	2.55E-03	5.06E-04		9.41E-01						
				.00E+00	1.08E-01	3.96E-02	1.89E-02	.00E+00	.00E+00	
2.98E-03	8.11E-04	6.81E-04		6.67E-03						
% OF ALL PATHWAYS				1.10E-05	9.05E-02	3.94E-01	2.43E-02	2.95E-02	.00E+00	
6.65E-03	1.40E-05	1.13E-07		6.96E-01						
				.00E+00	1.08E-01	3.86E-02	1.56E-02	.00E+00	.00E+00	
2.43E-07	2.51E-05	1.84E-05		4.35E-03						

GROUND SURFACE			3.44E-06	4.13E-12	7.62E-23	5.89E-06	3.18E-07	.00E+00
6.73E-03	2.56E-06	1.10E-07	7.51E-36 .00E+00	1.10E-09	1.90E-07	2.74E-09 .00E+00	.00E+00	
5.40E-13	8.31E-08	7.57E-08	6.74E-03 1.00E+02	9.99E+01	9.94E+01	1.00E+02 9.99E+01	.00E+00	
% OF EXTERNAL								
1.00E+02	1.00E+02	1.00E+02	9.91E+01 .00E+00	9.99E+01	1.00E+02	1.00E+02 .00E+00	.00E+00	
1.00E+02	1.00E+02	1.00E+02	1.00E+02 4.55E-01	7.85E+01	7.02E+01	9.24E+01 5.38E+01	.00E+00	
% OF ALL PATHWAYS								
1.00E+02	5.48E-01	2.24E-02	7.33E+01 .00E+00	9.99E+01	9.75E+01	8.26E+01 .00E+00	.00E+00	
8.16E-03	3.09E+00	2.71E+00	6.52E+01					
INTERNAL			7.53E-04	1.13E-12	3.20E-23	4.83E-07	2.73E-07	1.60E-03
3.60E-09	4.64E-04	4.92E-04	2.67E-36 4.97E-10	2.05E-15	4.82E-09	5.77E-10	2.81E-04	3.89E-09
6.62E-09	2.60E-06	2.72E-06	3.60E-03 9.95E+01	2.14E+01	2.95E+01	7.57E+00 4.62E+01	1.00E+02	
% OF ALL PATHWAYS								
5.35E-05	9.95E+01	1.00E+02	2.60E+01 1.00E+02	1.86E-04	2.47E+00	1.74E+01 1.00E+02	1.00E+02	
1.00E+02	9.69E+01	9.73E+01	3.48E+01					
EXTERNAL			3.44E-06	4.13E-12	7.66E-23	5.89E-06	3.18E-07	.00E+00
6.73E-03	2.56E-06	1.10E-07	7.59E-36 .00E+00	1.10E-09	1.90E-07	2.74E-09 .00E+00	.00E+00	
5.40E-13	8.31E-08	7.57E-08	6.74E-03 4.55E-01	7.86E+01	7.05E+01	9.24E+01 5.38E+01	.00E+00	
% OF ALL PATHWAYS								
1.00E+02	5.48E-01	2.24E-02	7.40E+01 .00E+00	1.00E+02	9.75E+01	8.26E+01 .00E+00	.00E+00	
8.16E-03	3.09E+00	2.71E+00	6.52E+01					
TOTAL OVER ALL PATHWAYS			7.57E-04	5.26E-12	1.09E-22	6.38E-06	5.91E-07	1.60E-03
6.73E-03	4.66E-04	4.92E-04	1.03E-35 4.97E-10	1.10E-09	1.95E-07	3.32E-09	2.81E-04	3.89E-09
6.62E-09	2.69E-06	2.80E-06	1.03E-02					
1			INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES					
			INDIVIDUAL DOSE EQ. RATE (MREM/YEAR)					

0\*\*\*FOR ORGAN :BREAST

NUCLIDES		PU-238	RU-103	AM-241	CE-144	CO-58	CO-60	CS-134	CS-137	BA-
137M	NP-237			RU-106	RH-106	SB-125	TE-125M	SR-90	Y-90	
TC-99	U-234	U-238	TOTAL							
PATHWAYS										
INGESTION										
3.84E-09	3.46E-06	7.67E-06	5.55E-37 4.12E-10	1.41E-13	1.50E-23	4.55E-07	3.12E-07	1.71E-03		
6.62E-09	2.54E-06	2.65E-06	2.00E-03 6.65E+00	3.53E-15	9.15E-10	2.14E-10	2.68E-04	6.88E-10		
% OF INTERNAL										
9.42E+01	7.64E+00	1.58E+01	6.97E+01 8.86E+01	2.27E+01	8.80E+01	8.89E+01	9.78E+01	9.82E+01		
9.99E+01	9.75E+01	9.68E+01	9.10E+01 6.19E+00	2.56E+00	1.74E+01	7.85E+00	5.14E+01	9.82E+01		
% OF ALL PATHWAYS										
6.26E-05	6.99E+00	1.56E+01	7.06E+00 8.86E+01	3.49E-04	5.03E-01	4.58E+00	9.51E+01	1.81E+01		
9.99E+01	8.39E+01	8.44E+01	2.40E+01							
INHALATION										
2.37E-10	4.18E-05	4.09E-05	2.41E-37 5.32E-11	4.78E-13	2.05E-24	5.67E-08	7.09E-09	3.20E-05		
6.52E-12	6.64E-08	8.65E-08	1.97E-04 9.34E+01	1.18E-16	3.84E-10	1.68E-11	1.38E-05	3.12E-09		
% OF INTERNAL										
5.81E+00	9.24E+01	8.42E+01	3.03E+01 1.14E+01	7.73E+01	1.20E+01	1.11E+01	2.22E+00	1.84E+00		
9.85E-02	2.55E+00	3.16E+00	8.96E+00 8.69E+01	8.72E+00	2.37E+00	9.78E-01	1.17E+00	1.84E+00		
% OF ALL PATHWAYS										
3.86E-06	8.44E+01	8.32E+01	3.07E+00 1.14E+01	1.16E-05	2.11E-01	3.58E-01	4.91E+00	8.19E+01		
9.85E-02	2.19E+00	2.75E+00	2.36E+00							

431.02  
01/30/2003  
Rev. 11

# ENGINEERING DESIGN FILE

EDF-3902  
Rev. 0  
Page 75 of 85

AIR IMMERSION			1.06E-10	5.51E-15	3.85E-25	1.39E-09	1.59E-10	.00E+00
4.07E-07	8.08E-11	2.38E-12	6.64E-38					
			.00E+00	1.09E-12	7.08E-11	8.41E-13	.00E+00	.00E+00
1.90E-17	1.69E-12	1.49E-12	4.09E-07					
% OF EXTERNAL			1.97E-03	1.13E-01	5.56E-01	2.63E-02	5.50E-02	.00E+00
6.64E-03	1.90E-03	4.01E-04	9.40E-01					
			.00E+00	1.08E-01	3.92E-02	1.89E-02	.00E+00	.00E+00
2.98E-03	4.02E-04	3.68E-04	6.65E-03					
% OF ALL PATHWAYS			1.35E-04	1.01E-01	4.46E-01	2.40E-02	2.61E-02	.00E+00
6.64E-03	1.63E-04	4.85E-06	8.45E-01					
			.00E+00	1.08E-01	3.89E-02	1.80E-02	.00E+00	.00E+00
2.87E-07	5.60E-05	4.74E-05	4.90E-03					
GROUND SURFACE			5.39E-06	4.86E-12	6.88E-23	5.28E-06	2.88E-07	.00E+00
6.13E-03	4.24E-06	5.94E-07	6.99E-36					
			.00E+00	1.01E-09	1.81E-07	4.45E-09	.00E+00	.00E+00
6.37E-13	4.22E-07	4.04E-07	6.15E-03					
% OF EXTERNAL			1.00E+02	9.99E+01	9.94E+01	1.00E+02	9.99E+01	.00E+00
1.00E+02	1.00E+02	1.00E+02	9.91E+01					
			.00E+00	9.99E+01	1.00E+02	1.00E+02	.00E+00	.00E+00
1.00E+02	1.00E+02	1.00E+02	1.00E+02					
% OF ALL PATHWAYS			6.88E+00	8.86E+01	7.98E+01	9.12E+01	4.74E+01	.00E+00
1.00E+02	8.57E+00	1.21E+00	8.90E+01					
			.00E+00	9.99E+01	9.92E+01	9.50E+01	.00E+00	.00E+00
9.62E-03	1.39E+01	1.29E+01	7.37E+01					
INTERNAL			7.30E-05	6.18E-13	1.71E-23	5.12E-07	3.19E-07	1.74E-03
4.08E-09	4.53E-05	4.86E-05	7.96E-37					
			4.65E-10	3.64E-15	1.30E-09	2.31E-10	2.81E-04	3.81E-09
6.62E-09	2.60E-06	2.73E-06	2.20E-03					
% OF ALL PATHWAYS			9.31E+01	1.13E+01	1.98E+01	8.82E+00	5.25E+01	1.00E+02
6.65E-05	9.14E+01	9.88E+01	1.01E+01					
			1.00E+02	3.60E-04	7.14E-01	4.94E+00	1.00E+02	1.00E+02
1.00E+02	8.61E+01	8.71E+01	2.63E+01					
EXTERNAL			5.39E-06	4.86E-12	6.92E-23	5.29E-06	2.89E-07	.00E+00
6.13E-03	4.24E-06	5.94E-07	7.06E-36					
			.00E+00	1.01E-09	1.81E-07	4.45E-09	.00E+00	.00E+00
6.37E-13	4.22E-07	4.04E-07	6.15E-03					
% OF ALL PATHWAYS			6.88E+00	8.87E+01	8.02E+01	9.12E+01	4.75E+01	.00E+00
1.00E+02	8.57E+00	1.21E+00	8.99E+01					
			.00E+00	1.00E+02	9.93E+01	9.51E+01	.00E+00	.00E+00
9.62E-03	1.39E+01	1.29E+01	7.37E+01					
TOTAL OVER ALL PATHWAYS			7.84E-05	5.48E-12	8.63E-23	5.80E-06	6.08E-07	1.74E-03
6.13E-03	4.95E-05	4.92E-05	7.85E-36					
			4.65E-10	1.01E-09	1.82E-07	4.68E-09	2.81E-04	3.81E-09
6.62E-09	3.03E-06	3.14E-06	8.35E-03					
1			INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES					
			INDIVIDUAL DOSE EQ. RATE (REM/YEAR)					

0\*\*\*FOR ORGAN :R MAR

NUCLIDES			AM-241	CE-144	CO-58	CO-60	CS-134	CS-137	BA-
137M	NP-237	PU-238	RU-103						
			RU-106	RH-106	SB-125	TE-125M	SR-90	Y-90	
TC-99	U-234	U-238	TOTAL						
PATHWAYS									
INGESTION			3.17E-04	1.02E-12	1.55E-23	4.24E-07	2.91E-07	1.56E-03	
3.00E-09	2.24E-04	5.00E-04	7.20E-37						
			4.15E-10	2.62E-15	2.05E-09	5.25E-09	3.27E-02	1.85E-08	
6.62E-09	6.79E-05	8.30E-05	3.54E-02						
% OF INTERNAL			6.65E+00	2.08E+01	8.86E+01	8.90E+01	9.78E+01	9.82E+01	
9.32E+01	7.64E+00	1.58E+01	7.47E+01						
			8.88E+01	9.60E+01	7.93E+01	9.53E+01	9.51E+01	1.80E+01	
9.99E+01	9.75E+01	9.74E+01	7.54E+01						
% OF ALL PATHWAYS			6.65E+00	1.42E+01	2.04E+01	8.47E+00	5.38E+01	9.82E+01	
5.85E-05	7.64E+00	1.58E+01	1.07E+01						
			8.88E+01	3.11E-04	1.41E+00	8.99E+01	9.51E+01	1.80E+01	
9.99E+01	9.75E+01	9.74E+01	6.80E+01						

INHALATION				4.44E-03	3.89E-12	2.00E-24	5.23E-08	6.61E-09	2.91E-05	
2.18E-10	2.71E-03	2.66E-03	2.44E-37		5.21E-11	1.10E-16	5.34E-10	2.60E-10	1.67E-03	8.42E-08
6.52E-12	1.71E-06	2.22E-06	1.15E-02		9.34E+01	7.92E+01	1.14E+01	1.10E+01	2.22E+00	1.83E+00
% OF INTERNAL										
6.78E+00	9.24E+01	8.42E+01	2.53E+01		1.12E+01	4.04E+00	2.07E+01	4.72E+00	4.88E+00	8.20E+01
9.85E-02	2.46E+00	2.60E+00	2.46E+01		9.33E+01	5.42E+01	2.63E+00	1.05E+00	1.22E+00	1.83E+00
% OF ALL PATHWAYS										
4.26E-06	9.23E+01	8.42E+01	3.63E+00		1.12E+01	1.31E-05	3.68E-01	4.46E+00	4.88E+00	8.20E+01
9.85E-02	2.46E+00	2.60E+00	2.21E+01							
AIR IMMERSION			2.70E-11		2.74E-15	3.26E-25	1.19E-09	1.34E-10	.00E+00	
3.41E-07	3.26E-11	6.98E-14	5.44E-38		.00E+00	9.05E-13	5.68E-11	6.48E-14	.00E+00	.00E+00
8.04E-18	2.29E-13	1.36E-13	3.43E-07		2.58E-03	1.21E-01	5.55E-01	2.63E-02	5.50E-02	.00E+00
% OF EXTERNAL										
6.66E-03	2.94E-03	1.06E-03	9.44E-01		.00E+00	1.08E-01	3.98E-02	1.96E-02	.00E+00	.00E+00
2.98E-03	2.13E-03	1.79E-03	6.68E-03		5.67E-07	3.82E-02	4.28E-01	2.38E-02	2.47E-02	.00E+00
% OF ALL PATHWAYS										
6.66E-03	1.11E-06	2.21E-09	8.09E-01		.00E+00	1.08E-01	3.91E-02	1.11E-03	.00E+00	.00E+00
1.21E-07	3.28E-07	1.59E-07	6.59E-04							
GROUND SURFACE			1.05E-06		2.26E-12	5.84E-23	4.53E-06	2.43E-07	.00E+00	
5.12E-03	1.11E-06	6.59E-09	5.71E-36		.00E+00	8.41E-10	1.43E-07	3.30E-10	.00E+00	.00E+00
2.70E-13	1.07E-08	7.57E-09	5.13E-03		1.00E+02	9.99E+01	9.94E+01	1.00E+02	9.99E+01	.00E+00
% OF EXTERNAL										
1.00E+02	1.00E+02	1.00E+02	9.91E+01		.00E+00	9.99E+01	1.00E+02	1.00E+02	.00E+00	.00E+00
1.00E+02	1.00E+02	1.00E+02	1.00E+02		2.20E-02	3.15E+01	7.66E+01	9.05E+01	4.49E+01	.00E+00
% OF ALL PATHWAYS										
1.00E+02	3.78E-02	2.08E-04	8.49E+01		.00E+00	9.99E+01	9.82E+01	5.65E+00	.00E+00	.00E+00
4.07E-03	1.54E-02	8.87E-03	9.85E+00							
INTERNAL			4.76E-03		4.91E-12	1.75E-23	4.76E-07	2.98E-07	1.59E-03	
3.22E-09	2.93E-03	3.16E-03	9.64E-37		4.67E-10	2.73E-15	2.59E-09	5.51E-09	3.43E-02	1.03E-07
6.62E-09	6.96E-05	8.53E-05	4.69E-02		1.00E+02	6.85E+01	2.30E+01	9.52E+00	5.50E+01	1.00E+02
% OF ALL PATHWAYS										
6.28E-05	1.00E+02	1.00E+02	1.43E+01		1.00E+02	3.24E-04	1.78E+00	9.44E+01	1.00E+02	1.00E+02
1.00E+02	1.00E+02	1.00E+02	9.01E+01							
EXTERNAL			1.05E-06		2.26E-12	5.87E-23	4.53E-06	2.43E-07	.00E+00	
5.12E-03	1.11E-06	6.59E-09	5.76E-36		.00E+00	8.42E-10	1.43E-07	3.30E-10	.00E+00	.00E+00
2.70E-13	1.07E-08	7.57E-09	5.13E-03		2.20E-02	3.15E+01	7.70E+01	9.05E+01	4.50E+01	.00E+00
% OF ALL PATHWAYS										
1.00E+02	3.78E-02	2.08E-04	8.57E+01		.00E+00	1.00E+02	9.82E+01	5.65E+00	.00E+00	.00E+00
4.07E-03	1.54E-02	8.87E-03	9.86E+00							
TOTAL OVER ALL PATHWAYS			4.76E-03		7.18E-12	7.62E-23	5.01E-06	5.41E-07	1.59E-03	
5.12E-03	2.93E-03	3.16E-03	6.73E-36		4.67E-10	8.42E-10	1.45E-07	5.84E-09	3.43E-02	1.03E-07
6.62E-09	6.96E-05	8.53E-05	5.21E-02		INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES					
1					INDIVIDUAL DOSE EQ. RATE (MREM/YEAR)					

O\*\*\*FOR ORGAN : LUNGS

<b>NUCLIDES</b>		<b>AM-241</b>	<b>CE-144</b>	<b>CO-58</b>	<b>CO-60</b>	<b>CS-134</b>	<b>CS-137</b>	<b>BA-</b>	
137M	NP-237	PU-238	RU-103	RU-106	RH-106	SB-125	TE-125M	SR-90	Y-90
TC-99	U-234	U-238	TOTAL						
<b>PATHWAYS</b>									

INGESTION				4.86E-06	7.62E-14	1.10E-23	4.41E-07	2.70E-07	1.58E-03	
4.71E-09	3.46E-06	7.67E-06	3.27E-37		4.02E-10	4.54E-15	5.25E-10	1.95E-10	2.68E-04	6.86E-10
6.62E-09	2.54E-06	2.65E-06	1.87E-03		1.03E+00	7.18E-03	2.40E+01	2.96E+01	9.76E+01	9.80E+01
% OF INTERNAL										
3.95E+01	1.24E+00	6.11E-02	2.66E+00		1.34E+00	2.47E+00	2.69E+00	7.60E+00	9.31E+01	1.12E-03
7.15E+01	3.47E-02	3.51E-02	6.22E+00		1.03E+00	7.16E-03	1.06E+01	7.37E+00	5.24E+01	9.80E+01
% OF ALL PATHWAYS										
9.33E-05	1.23E+00	6.11E-02	1.82E+00		1.34E+00	5.50E-04	3.30E-01	5.68E+00	9.31E+01	1.12E-03
7.15E+01	3.47E-02	3.51E-02	5.32E+00							
INHALATION				4.67E-04	1.06E-09	3.47E-23	1.05E-06	6.52E-09	3.27E-05	
7.22E-09	2.76E-04	1.25E-02	1.19E-35		2.97E-08	1.79E-13	1.90E-08	2.37E-09	1.98E-05	6.11E-05
2.63E-09	7.31E-03	7.53E-03	2.82E-02		9.90E+01	1.00E+02	7.60E+01	7.04E+01	2.36E+00	2.03E+00
% OF INTERNAL										
6.05E+01	9.88E+01	9.99E+01	9.73E+01		9.87E+01	9.75E+01	9.73E+01	9.24E+01	6.88E+00	1.00E+02
2.85E+01	1.00E+02	1.00E+02	9.38E+01		9.86E+01	9.97E+01	3.35E+01	1.75E+01	1.27E+00	2.03E+00
% OF ALL PATHWAYS										
1.43E-04	9.82E+01	9.99E+01	6.66E+01		9.87E+01	2.17E-02	1.19E+01	6.90E+01	6.88E+00	1.00E+02
2.85E+01	1.00E+02	1.00E+02	8.03E+01							
AIR IMMERSION				5.00E-11	3.24E-15	3.21E-25	1.18E-09	1.31E-10	.00E+00	
3.35E-07	4.28E-11	1.55E-13	5.32E-38		.00E+00	8.88E-13	5.58E-11	1.66E-13	.00E+00	.00E+00
1.10E-17	3.40E-13	2.40E-13	3.37E-07		2.56E-03	1.18E-01	5.56E-01	2.63E-02	5.49E-02	.00E+00
% OF EXTERNAL										
6.64E-03	2.83E-03	8.69E-04	9.39E-01		.00E+00	1.08E-01	3.99E-02	1.90E-02	.00E+00	.00E+00
2.99E-03	1.67E-03	1.45E-03	6.65E-03		1.06E-05	3.04E-04	3.10E-01	1.97E-02	2.55E-02	.00E+00
% OF ALL PATHWAYS										
6.64E-03	1.52E-05	1.24E-09	2.97E-01		.00E+00	1.08E-01	3.50E-02	4.82E-03	.00E+00	.00E+00
1.19E-07	4.65E-09	3.19E-09	9.58E-04							
GROUND SURFACE				1.95E-06	2.73E-12	5.74E-23	4.49E-06	2.39E-07	.00E+00	
5.05E-03	1.51E-06	1.79E-08	5.61E-36		.00E+00	8.24E-10	1.40E-07	8.70E-10	.00E+00	.00E+00
3.67E-13	2.04E-08	1.66E-08	5.06E-03		1.00E+02	9.99E+01	9.94E+01	1.00E+02	9.99E+01	.00E+00
% OF EXTERNAL										
1.00E+02	1.00E+02	1.00E+02	9.91E+01		.00E+00	9.99E+01	1.00E+02	1.00E+02	.00E+00	.00E+00
1.00E+02	1.00E+02	1.00E+02	1.00E+02		4.12E-01	2.57E-01	5.55E+01	7.51E+01	4.64E+01	.00E+00
% OF ALL PATHWAYS										
1.00E+02	5.39E-01	1.42E-04	3.13E+01		.00E+00	9.99E+01	8.77E+01	2.53E+01	.00E+00	.00E+00
3.97E-03	2.79E-04	2.20E-04	1.44E+01							
INTERNAL				4.71E-04	1.06E-09	4.56E-23	1.49E-06	2.76E-07	1.62E-03	
1.19E-08	2.79E-04	1.26E-02	1.23E-35		3.01E-08	1.84E-13	1.95E-08	2.57E-09	2.87E-04	6.11E-05
9.25E-09	7.31E-03	7.53E-03	3.01E-02		9.96E+01	9.97E+01	4.42E+01	2.49E+01	5.36E+01	1.00E+02
% OF ALL PATHWAYS										
2.36E-04	9.95E+01	1.00E+02	6.84E+01		1.00E+02	2.23E-02	1.23E+01	7.47E+01	1.00E+02	1.00E+02
1.00E+02	1.00E+02	1.00E+02	8.56E+01							
EXTERNAL				1.95E-06	2.74E-12	5.77E-23	4.49E-06	2.39E-07	.00E+00	
5.05E-03	1.51E-06	1.79E-08	5.67E-36		.00E+00	8.25E-10	1.40E-07	8.70E-10	.00E+00	.00E+00
3.67E-13	2.04E-08	1.66E-08	5.06E-03		4.12E-01	2.57E-01	5.58E+01	7.51E+01	4.64E+01	.00E+00
% OF ALL PATHWAYS										
1.00E+02	5.39E-01	1.42E-04	3.16E+01		.00E+00	1.00E+02	8.77E+01	2.53E+01	.00E+00	.00E+00
3.97E-03	2.79E-04	2.20E-04	1.44E+01							
TOTAL OVER ALL PATHWAYS				4.73E-04	1.06E-09	1.03E-22	5.98E-06	5.15E-07	1.62E-03	
5.05E-03	2.81E-04	1.26E-02	1.79E-35		3.01E-08	8.25E-10	1.59E-07	3.44E-09	2.87E-04	6.11E-05
9.25E-09	7.31E-03	7.53E-03	3.52E-02							

1 INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES  
INDIVIDUAL DOSE EQ. RATE (MREM/YEAR)

0\*\*\*FOR ORGAN :THYROID

NUCLIDES			AM-241	CE-144	CO-58	CO-60	CS-134	CS-137	BA-
137M	NP-237	PU-238	RU-103						
TC-99	U-234	U-238		RU-106	RH-106	SB-125	TE-125M	SR-90	Y-90
PATHWAYS			TOTAL						
INGESTION				4.85E-06	6.10E-14	1.44E-23	4.98E-07	3.52E-07	1.81E-03
4.16E-10	3.45E-06	7.67E-06	3.11E-37	4.07E-10	3.97E-16	4.71E-10	1.86E-10	2.68E-04	6.86E-10
1.71E-07	2.54E-06	2.64E-06	2.10E-03	6.65E+00	1.32E+01	8.82E+01	9.09E+01	9.78E+01	9.82E+01
6.53E+01	7.64E+00	1.58E+01	6.08E+01	8.88E+01	7.86E+01	6.07E+01	9.51E+01	9.51E+01	1.80E+01
9.99E+01	9.75E+01	9.70E+01	9.14E+01	6.38E+00	1.38E+00	1.62E+01	8.10E+00	5.34E+01	9.82E+01
6.55E-06	7.28E+00	1.58E+01	4.14E+00	8.88E+01	3.86E-05	2.66E-01	9.40E+00	9.51E+01	1.80E+01
9.99E+01	9.65E+01	9.63E+01	2.43E+01						
INHALATION				6.82E-05	4.02E-13	1.92E-24	5.01E-08	8.00E-09	3.39E-05
2.21E-10	4.17E-05	4.09E-05	2.00E-37	5.15E-11	1.09E-16	3.05E-10	9.56E-12	1.38E-05	3.12E-09
1.69E-10	6.55E-08	8.06E-08	1.99E-04	9.34E+01	8.68E+01	1.18E+01	9.15E+00	2.22E+00	1.84E+00
3.47E+01	9.24E+01	8.42E+01	3.92E+01	1.12E+01	2.14E+01	3.93E+01	4.88E+00	4.91E+00	8.20E+01
9.85E-02	2.52E+00	2.96E+00	8.64E+00	8.96E+01	9.08E+00	2.16E+00	8.15E-01	1.21E+00	1.84E+00
3.48E-06	8.80E+01	8.42E+01	2.67E+00	1.12E+01	1.05E-05	1.72E-01	4.83E-01	4.91E+00	8.20E+01
9.85E-02	2.49E+00	2.93E+00	2.30E+00						
AIR IMMERSION				7.94E-11	4.63E-15	4.03E-25	1.47E-09	1.65E-10	.00E+00
4.20E-07	6.28E-11	2.26E-13	6.61E-38	.00E+00	1.11E-12	7.01E-11	3.38E-13	.00E+00	.00E+00
1.61E-17	5.03E-13	3.62E-13	4.22E-07	2.57E-03	1.17E-01	5.57E-01	2.63E-02	5.51E-02	.00E+00
6.63E-03	2.80E-03	1.02E-03	9.43E-01	.00E+00	1.08E-01	3.97E-02	1.89E-02	.00E+00	.00E+00
2.98E-03	1.85E-03	1.69E-03	6.65E-03	1.04E-04	1.04E-01	4.55E-01	2.39E-02	2.50E-02	.00E+00
6.63E-03	1.32E-04	4.64E-07	8.79E-01	.00E+00	1.08E-01	3.95E-02	1.71E-02	.00E+00	.00E+00
9.40E-09	1.91E-05	1.32E-05	4.88E-03						
GROUND SURFACE				3.08E-06	3.96E-12	7.20E-23	5.60E-06	2.99E-07	.00E+00
6.34E-03	2.24E-06	2.20E-08	6.94E-36	.00E+00	1.03E-09	1.76E-07	1.78E-09	.00E+00	.00E+00
5.40E-13	2.71E-08	2.14E-08	6.35E-03	1.00E+02	9.99E+01	9.94E+01	1.00E+02	9.99E+01	.00E+00
1.00E+02	1.00E+02	1.00E+02	9.91E+01	.00E+00	9.99E+01	1.00E+02	1.00E+02	.00E+00	.00E+00
1.00E+02	1.00E+02	1.00E+02	1.00E+02	4.05E+00	8.94E+01	8.12E+01	9.11E+01	4.54E+01	.00E+00
1.00E+02	4.73E+00	4.53E-02	9.23E+01	.00E+00	9.99E+01	9.95E+01	9.01E+01	.00E+00	.00E+00
3.16E-04	1.03E+00	7.81E-01	7.34E+01						
INTERNAL				7.30E-05	4.64E-13	1.63E-23	5.48E-07	3.60E-07	1.85E-03
6.36E-10	4.52E-05	4.86E-05	5.12E-37	4.58E-10	5.06E-16	7.76E-10	1.96E-10	2.81E-04	3.80E-09
1.71E-07	2.60E-06	2.72E-06	2.30E-03	9.59E+01	1.05E+01	1.83E+01	8.92E+00	5.46E+01	1.00E+02
1.00E-05	9.53E+01	1.00E+02	6.80E+00	1.00E+02	4.92E-05	4.38E-01	9.88E+00	1.00E+02	1.00E+02
1.00E+02	9.90E+01	9.92E+01	2.66E+01						

EXTERNAL			3.08E-06	3.97E-12	7.24E-23	5.60E-06	2.99E-07	.00E+00	
6.34E-03	2.24E-06	2.20E-08	7.01E-36	.00E+00	1.03E-09	1.77E-07	1.78E-09	.00E+00	
5.40E-13	2.71E-08	2.14E-08	6.35E-03	4.05E+00	8.95E+01	8.17E+01	9.11E+01	4.54E+01	.00E+00
% OF ALL PATHWAYS									
1.00E+02	4.73E+00	4.53E-02	9.32E+01	.00E+00	1.00E+02	9.96E+01	9.01E+01	.00E+00	.00E+00
3.16E-04	1.03E+00	7.81E-01	7.34E+01						
TOTAL OVER ALL PATHWAYS			7.61E-05	4.43E-12	8.87E-23	6.15E-06	6.60E-07	1.85E-03	
6.34E-03	4.74E-05	4.86E-05	7.52E-36	4.58E-10	1.03E-09	1.77E-07	1.98E-09	2.81E-04	3.80E-09
1.71E-07	2.63E-06	2.75E-06	8.65E-03						
1									
INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES									
INDIVIDUAL DOSE EQ. RATE(MREM/YEAR)									

0\*\*\*FOR ORGAN :ENDOST

NUCLIDES			AM-241	CE-144	CO-58	CO-60	CS-134	CS-137	BA-
137M	NP-237	PU-238	RU-103						
				RU-106	RH-106	SB-125	TE-125M	SR-90	Y-90
TC-99	U-234	U-238		TOTAL					
PATHWAYS									
INGESTION									
1.65E-09	2.77E-03	6.16E-03	3.90E-03	1.50E-12	8.47E-24	2.79E-07	1.94E-07	1.09E-03	
			3.53E-37	3.98E-10	1.51E-15	6.96E-09	5.63E-08	7.22E-02	1.83E-08
6.62E-09	1.07E-03	1.08E-03	8.83E-02						
% OF INTERNAL			6.65E+00	1.86E+01	8.51E+01	8.74E+01	9.78E+01	9.82E+01	
9.09E+01	7.64E+00	1.58E+01	6.68E+01						
			8.94E+01	9.45E+01	8.19E+01	9.54E+01	9.51E+01	1.80E+01	
9.99E+01	9.75E+01	9.75E+01	4.14E+01						
% OF ALL PATHWAYS			6.65E+00	1.20E+01	1.14E+01	5.45E+00	4.15E+01	9.82E+01	
2.89E-05	7.64E+00	1.58E+01	4.93E+00						
			8.94E+01	1.60E-04	4.00E+00	9.30E+01	9.51E+01	1.80E+01	
9.99E+01	9.75E+01	9.75E+01	4.03E+01						
INHALATION									
1.65E-10	3.34E-02	3.29E-02	5.48E-02	6.54E-12	1.48E-24	4.04E-08	4.40E-09	2.03E-05	
			1.75E-37	4.72E-11	8.77E-17	1.54E-09	2.74E-09	3.70E-03	8.30E-08
6.52E-12	2.70E-05	2.73E-05	1.25E-01						
% OF INTERNAL			9.34E+01	8.14E+01	1.49E+01	1.26E+01	2.22E+00	1.84E+00	
9.10E+00	9.24E+01	8.42E+01	3.32E+01						
			1.06E+01	5.50E+00	1.81E+01	4.65E+00	4.88E+00	8.20E+01	
9.85E-02	2.46E+00	2.47E+00	5.86E+01						
% OF ALL PATHWAYS			9.33E+01	5.24E+01	1.99E+00	7.88E-01	9.44E-01	1.84E+00	
2.89E-06	9.24E+01	8.42E+01	2.45E+00						
			1.06E+01	9.28E-06	8.86E-01	4.53E+00	4.88E+00	8.20E+01	
9.85E-02	2.46E+00	2.47E+00	5.70E+01						
AIR IMMERSION									
3.79E-07	7.28E-11	2.76E-13	9.19E-11	5.23E-15	3.58E-25	1.26E-09	1.48E-10	.00E+00	
			6.24E-38	.00E+00	1.02E-12	6.58E-11	2.88E-13	.00E+00	.00E+00
1.91E-17	5.88E-13	4.33E-13	3.80E-07						
% OF EXTERNAL			2.56E-03	1.18E-01	5.57E-01	2.63E-02	5.50E-02	.00E+00	
6.63E-03	2.82E-03	9.22E-04	9.41E-01						
			.00E+00	1.08E-01	3.97E-02	1.91E-02	.00E+00	.00E+00	
2.98E-03	1.70E-03	1.52E-03	6.64E-03						
% OF ALL PATHWAYS			1.57E-07	4.19E-02	4.82E-01	2.46E-02	3.17E-02	.00E+00	
6.63E-03	2.01E-07	7.07E-10	8.72E-01						
			.00E+00	1.08E-01	3.78E-02	4.75E-04	.00E+00	.00E+00	
2.89E-07	5.36E-08	3.93E-08	1.74E-04						
GROUND SURFACE									
5.72E-03	2.58E-06	2.99E-08	3.59E-06	4.44E-12	6.40E-23	4.80E-06	2.68E-07	.00E+00	
			6.56E-36	.00E+00	9.43E-10	1.66E-07	1.51E-09	.00E+00	.00E+00
6.42E-13	3.47E-08	2.85E-08	5.73E-03						
% OF EXTERNAL			1.00E+02	9.99E+01	9.94E+01	1.00E+02	9.99E+01	.00E+00	
1.00E+02	1.00E+02	1.00E+02	9.91E+01						
			.00E+00	9.99E+01	1.00E+02	1.00E+02	.00E+00	.00E+00	
1.00E+02	1.00E+02	1.00E+02	1.00E+02						
% OF ALL PATHWAYS			6.11E-03	3.56E+01	8.61E+01	9.37E+01	5.75E+01	.00E+00	
1.00E+02	7.13E-03	7.67E-05	9.18E+01						

9.70E-03	3.16E-03	2.59E-03	2.62E+00	.00E+00	9.99E+01	9.51E+01	2.49E+00	.00E+00	.00E+00
INTERNAL				5.87E-02	8.04E-12	9.95E-24	3.20E-07	1.98E-07	1.11E-03
1.82E-09	3.62E-02	3.90E-02	5.28E-37	4.45E-10	1.60E-15	8.51E-09	5.90E-08	7.59E-02	1.01E-07
6.62E-09	1.10E-03	1.10E-03	2.13E-01	1.00E+02	6.44E+01	1.34E+01	6.24E+00	4.25E+01	1.00E+02
% OF ALL PATHWAYS									
3.18E-05	1.00E+02	1.00E+02	7.38E+00	1.00E+02	1.69E-04	4.88E+00	9.75E+01	1.00E+02	1.00E+02
1.00E+02	1.00E+02	1.00E+02	9.74E+01						
EXTERNAL				3.59E-06	4.44E-12	6.43E-23	4.80E-06	2.68E-07	.00E+00
5.72E-03	2.58E-06	2.99E-08	6.63E-36	.00E+00	9.44E-10	1.66E-07	1.51E-09	.00E+00	.00E+00
6.42E-13	3.47E-08	2.85E-08	5.73E-03	6.11E-03	3.56E+01	8.66E+01	9.38E+01	5.75E+01	.00E+00
% OF ALL PATHWAYS									
1.00E+02	7.13E-03	7.67E-05	9.26E+01	.00E+00	1.00E+02	9.51E+01	2.49E+00	.00E+00	.00E+00
9.70E-03	3.16E-03	2.59E-03	2.62E+00						
TOTAL OVER ALL PATHWAYS				5.87E-02	1.25E-11	7.43E-23	5.12E-06	4.66E-07	1.11E-03
5.72E-03	3.62E-02	3.90E-02	7.15E-36	4.45E-10	9.44E-10	1.74E-07	6.05E-08	7.59E-02	1.01E-07
6.62E-09	1.10E-03	1.10E-03	2.19E-01						
1				INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES					
				INDIVIDUAL DOSE EQ. RATE(MREM/YEAR)					

0\*\*\*FOR ORGAN :RMNDR

NUCLIDES			AM-241	CE-144	CO-58	CO-60	CS-134	CS-137	BA-
137M	NP-237	PU-238	RU-103						
			RU-106	RH-106	SB-125	TE-125M	SR-90	Y-90	
TC-99	U-234	U-238	TOTAL						
PATHWAYS									
INGESTION									
7.91E-08	1.23E-04	2.81E-04	1.75E-04	2.15E-10	4.34E-23	7.12E-07	3.27E-07	1.76E-03	
			8.89E-36						
			5.62E-09	2.07E-12	1.59E-08	6.04E-09	1.06E-03	4.85E-04	
1.06E-07	9.20E-05	9.53E-05	4.08E-03						
% OF INTERNAL			6.76E+00	8.93E+01	9.14E+01	8.67E+01	9.78E+01	9.82E+01	
9.93E+01	7.76E+00	1.58E+01	9.04E+01						
			9.43E+01	1.00E+02	9.24E+01	9.76E+01	9.85E+01	9.58E+01	
9.99E+01	9.74E+01	9.69E+01	4.28E+01						
% OF ALL PATHWAYS			6.75E+00	8.83E+01	4.11E+01	1.33E+01	5.69E+01	9.82E+01	
1.56E-03	7.75E+00	1.58E+01	5.75E+01						
			9.43E+01	2.50E-01	1.01E+01	8.44E+01	9.85E+01	9.58E+01	
9.99E+01	9.73E+01	9.69E+01	2.79E+01						
INHALATION									
5.86E-10	1.47E-03	1.49E-03	2.42E-03	2.58E-11	4.09E-24	1.09E-07	7.44E-09	3.30E-05	
			9.47E-37						
			3.37E-10	2.74E-16	1.31E-09	1.52E-10	1.60E-05	2.14E-05	
9.72E-11	2.50E-06	3.04E-06	5.46E-03						
% OF INTERNAL			9.32E+01	1.07E+01	8.60E+00	1.33E+01	2.22E+00	1.84E+00	
7.35E-01	9.22E+01	8.42E+01	9.63E+00						
			5.66E+00	1.32E-02	7.61E+00	2.45E+00	1.48E+00	4.23E+00	
9.16E-02	2.65E+00	3.09E+00	5.72E+01						
% OF ALL PATHWAYS			9.32E+01	1.06E+01	3.86E+00	2.03E+00	1.29E+00	1.84E+00	
1.15E-05	9.22E+01	8.42E+01	6.12E+00						
			5.66E+00	3.30E-05	8.34E-01	2.12E+00	1.48E+00	4.23E+00	
9.16E-02	2.65E+00	3.09E+00	3.73E+01						
AIR IMMERSION									
3.37E-07	4.15E-11	1.15E-13	4.89E-11	3.18E-15	3.25E-25	1.20E-09	1.32E-10	.00E+00	
			5.31E-38						
			.00E+00	8.91E-13	5.58E-11	1.83E-13	.00E+00	.00E+00	
1.06E-17	3.13E-13	2.16E-13	3.39E-07						
% OF EXTERNAL			2.60E-03	1.18E-01	5.58E-01	2.63E-02	5.50E-02	.00E+00	
6.65E-03	2.87E-03	1.03E-03	9.44E-01						
			.00E+00	1.08E-01	3.98E-02	1.90E-02	.00E+00	.00E+00	
2.98E-03	2.13E-03	1.91E-03	6.67E-03						
% OF ALL PATHWAYS			1.88E-06	1.31E-03	3.07E-01	2.23E-02	2.30E-02	.00E+00	
6.65E-03	2.61E-06	6.50E-09	3.43E-01						

9.99E-09	3.31E-07	2.19E-07	2.32E-03	.00E+00	1.07E-01	3.54E-02	2.56E-03	.00E+00	.00E+00
<b>GROUND SURFACE</b>									
5.07E-03	1.45E-06	1.12E-08	5.57E-36	1.88E-06	2.69E-12	5.79E-23	4.54E-06	2.40E-07	.00E+00
3.55E-13	1.47E-08	1.13E-08	5.08E-03	.00E+00	8.27E-10	1.40E-07	9.64E-10	.00E+00	.00E+00
% OF EXTERNAL			1.00E+02	1.00E+02	9.99E+01	9.94E+01	1.00E+02	9.99E+01	.00E+00
1.00E+02	1.00E+02	1.00E+02	9.91E+01	.00E+00	9.99E+01	1.00E+02	1.00E+02	.00E+00	.00E+00
1.00E+02	1.00E+02	1.00E+02	1.00E+02	7.24E-02	1.11E+00	5.48E+01	8.47E+01	4.18E+01	.00E+00
% OF ALL PATHWAYS			1.00E+02	6.30E-04	3.60E+01	.00E+00	9.96E+01	8.90E+01	1.35E+01
1.00E+02	9.09E-02	6.30E-04	3.48E+01	.00E+00	9.96E+01	8.90E+01	1.35E+01	.00E+00	.00E+00
<b>INTERNAL</b>									
7.96E-08	1.59E-03	1.77E-03	9.84E-36	2.60E-03	2.41E-10	4.75E-23	8.21E-07	3.35E-07	1.80E-03
1.06E-07	9.45E-05	9.84E-05	9.54E-03	5.95E-09	2.07E-12	1.73E-08	6.19E-09	1.08E-03	5.06E-04
% OF ALL PATHWAYS			1.00E+02	9.99E+01	9.89E+01	4.49E+01	1.53E+01	5.82E+01	1.00E+02
1.57E-03	9.99E+01	1.00E+02	6.36E+01	1.00E+02	2.50E-01	1.10E+01	8.65E+01	1.00E+02	1.00E+02
1.00E+02	1.00E+02	1.00E+02	6.52E+01	.00E+00	9.98E+01	8.90E+01	1.35E+01	.00E+00	.00E+00
<b>EXTERNAL</b>									
5.07E-03	1.45E-06	1.12E-08	5.63E-36	1.88E-06	2.70E-12	5.82E-23	4.54E-06	2.41E-07	.00E+00
3.55E-13	1.47E-08	1.13E-08	5.08E-03	.00E+00	8.28E-10	1.40E-07	9.64E-10	.00E+00	.00E+00
% OF ALL PATHWAYS			1.00E+02	6.30E-04	3.64E+01	7.24E-02	1.11E+00	5.51E+01	8.47E+01
1.00E+02	9.09E-02	6.30E-04	3.48E+01	.00E+00	9.98E+01	8.90E+01	1.35E+01	.00E+00	.00E+00
3.35E-04	1.56E-02	1.15E-02	3.48E+01	.00E+00	9.98E+01	8.90E+01	1.35E+01	.00E+00	.00E+00
<b>TOTAL OVER ALL PATHWAYS</b>									
5.07E-03	1.59E-03	1.77E-03	1.55E-35	2.60E-03	2.44E-10	1.06E-22	5.37E-06	5.75E-07	1.80E-03
1.06E-07	9.45E-05	9.84E-05	1.46E-02	5.95E-09	8.30E-10	1.57E-07	7.15E-09	1.08E-03	5.06E-04
1 INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES									
1 INDIVIDUAL DOSE EQ. RATE (MREM/YEAR)									

0\*\*\*FOR ORGAN :EFFEC

NUCLIDES		NP-237	PU-238	RU-103	AM-241	CE-144	CO-58	CO-60	CS-134	CS-137	BA-
137M	TC-99				U-234	U-238	TOTAL	RU-106	RH-106	SB-125	TE-125M
PATHWAYS											
<b>INGESTION</b>											
2.62E-08	1.57E-04	3.51E-04	3.51E-36	2.22E-04	6.49E-11	2.68E-23	5.26E-07	2.95E-07	1.64E-03		
4.14E-08	6.93E-05	7.23E-05	9.21E-03	1.98E-09	6.24E-13	6.58E-09	4.33E-09	6.55E-03	1.45E-04		
% OF INTERNAL			9.59E+01	6.58E+00	3.23E+01	8.08E+01	7.46E+01	9.78E+01	9.81E+01		
9.59E+01	7.56E+00	9.43E+00	6.54E+01	3.49E+01	9.66E+01	6.92E+01	9.06E+01	9.53E+01	9.13E+01		
9.92E+01	7.31E+00	7.39E+00	4.65E+01	6.57E+00	3.18E+01	2.73E+01	9.18E+00	5.17E+01	9.81E+01		
% OF ALL PATHWAYS			4.58E-04	7.55E+00	9.43E+00	2.98E+01	3.49E+01	6.67E-02	3.86E+00	6.50E+01	
4.58E-04	7.55E+00	9.43E+00	3.61E+01	.00E+00	9.43E+00	6.67E-02	3.86E+00	6.50E+01	9.53E+01	9.13E+01	
9.92E+01	7.31E+00	7.39E+00	3.61E+01	.00E+00	9.43E+00	6.67E-02	3.86E+00	6.50E+01	9.53E+01	9.13E+01	
<b>INHALATION</b>											
1.13E-09	1.92E-03	3.37E-03	1.85E-36	3.15E-03	1.36E-10	6.37E-24	1.80E-07	6.76E-09	3.11E-05		
3.54E-10	8.79E-04	9.06E-04	1.06E-02	3.70E-09	2.16E-14	2.93E-09	4.51E-10	3.25E-04	1.38E-05		
% OF INTERNAL			4.13E+00	9.34E+01	6.77E+01	1.92E+01	2.54E+01	2.24E+00	1.86E+00		
4.13E+00	9.24E+01	9.06E+01	3.46E+01	6.51E+01	3.35E+00	3.08E+01	9.44E+00	4.73E+00	8.65E+00		
8.47E-01	9.27E+01	9.26E+01	5.35E+01	9.33E+01	6.65E+01	6.49E+00	3.13E+00	1.18E+00	1.86E+00		
% OF ALL PATHWAYS			1.98E-05	9.23E+01	9.06E+01	1.57E+01	.00E+00	.00E+00	.00E+00		

8.47E-01	9.27E+01	9.26E+01	4.15E+01	6.51E+01	2.31E-03	1.72E+00	6.77E+00	4.73E+00	8.65E+00
<b>AIR IMMERSION</b>									
3.79E-07	5.40E-11	5.73E-13	6.05E-38	6.57E-11	3.99E-15	3.63E-25	1.32E-09	1.48E-10	.00E+00
1.34E-17	6.17E-13	4.86E-13	.00E+00	3.81E-07	1.01E-12	6.38E-11	3.57E-13	.00E+00	.00E+00
6.65E-03	2.49E-03	4.61E-04	9.42E-01	2.35E-03	1.16E-01	5.57E-01	2.63E-02	5.50E-02	.00E+00
2.98E-03	6.57E-04	5.56E-04	.00E+00	6.66E-03	1.08E-01	3.96E-02	1.89E-02	.00E+00	.00E+00
% OF EXTERNAL PATHWAYS				1.95E-06	1.95E-03	3.69E-01	2.30E-02	2.59E-02	.00E+00
6.65E-03	2.60E-06	1.54E-08	5.13E-01	.00E+00	1.08E-01	3.74E-02	5.35E-03	.00E+00	.00E+00
3.21E-08	6.51E-08	4.96E-08	1.49E-03						
<b>GROUND SURFACE</b>									
5.71E-03	2.17E-06	1.24E-07	6.36E-36	2.79E-06	3.42E-12	6.47E-23	5.02E-06	2.70E-07	.00E+00
4.49E-13	9.41E-08	8.74E-08	5.72E-03	.00E+00	9.34E-10	1.61E-07	1.88E-09	.00E+00	.00E+00
% OF EXTERNAL PATHWAYS			1.00E+02	1.00E+02	9.99E+01	9.94E+01	1.00E+02	9.99E+01	.00E+00
1.00E+02	1.00E+02	1.00E+02	9.91E+01	.00E+00	9.99E+01	1.00E+02	1.00E+02	.00E+00	.00E+00
1.00E+02	1.00E+02	1.00E+02	1.00E+02	8.28E-02	1.67E+00	6.59E+01	8.77E+01	4.71E+01	.00E+00
1.00E+02	1.05E-01	3.35E-03	5.40E+01	.00E+00	9.98E+01	9.44E+01	2.83E+01	.00E+00	.00E+00
1.08E-03	9.92E-03	8.93E-03	2.24E+01						
<b>INTERNAL</b>									
2.73E-08	2.07E-03	3.72E-03	5.36E-36	3.37E-03	2.01E-10	3.32E-23	7.06E-07	3.02E-07	1.67E-03
4.17E-08	9.48E-04	9.78E-04	5.68E-09	6.45E-13	9.51E-09	4.78E-09	6.87E-03	1.59E-04	
% OF ALL PATHWAYS			1.98E-02	9.99E+01	9.83E+01	3.38E+01	1.23E+01	5.28E+01	1.00E+02
4.78E-04	9.99E+01	1.00E+02	4.55E+01	1.00E+02	6.90E-02	5.58E+00	7.17E+01	1.00E+02	1.00E+02
1.00E+02	1.00E+02	1.00E+02	7.76E+01						
<b>EXTERNAL</b>									
5.71E-03	2.17E-06	1.24E-07	6.42E-36	2.79E-06	3.42E-12	6.51E-23	5.02E-06	2.70E-07	.00E+00
4.49E-13	9.41E-08	8.74E-08	5.72E-03	.00E+00	9.35E-10	1.61E-07	1.89E-09	.00E+00	.00E+00
% OF ALL PATHWAYS			8.28E-02	1.68E+00	6.62E+01	8.77E+01	4.72E+01	.00E+00	.00E+00
1.00E+02	1.05E-01	3.35E-03	5.45E+01	.00E+00	9.99E+01	9.44E+01	2.83E+01	.00E+00	.00E+00
1.08E-03	9.92E-03	8.93E-03	2.24E+01						
<b>TOTAL OVER ALL PATHWAYS</b>									
5.71E-03	2.07E-03	3.72E-03	1.18E-35	3.37E-03	2.04E-10	9.83E-23	5.73E-06	5.72E-07	1.67E-03
4.17E-08	9.48E-04	9.78E-04	5.68E-09	9.36E-10	1.70E-07	6.67E-09	6.87E-03	1.59E-04	
1									
INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES									
INDIVIDUAL DOSE EQ. RATE (REM/YEAR)									

0\*\*\*FOR ORGAN :WT. SUM

NUCLIDES			AM-241	CE-144	CO-58	CO-60	CS-134	CS-137	BA-
137M	NP-237	PU-238	RU-103	RU-106	RH-106	SB-125	TE-125M	SR-90	Y-90
TC-99	U-234	U-238	TOTAL						
<b>PATHWAYS</b>									
<b>INGESTION</b>									
2.62E-08	1.57E-04	3.51E-04	3.51E-36	2.22E-04	6.49E-11	2.68E-23	5.26E-07	2.95E-07	1.64E-03
4.14E-08	6.93E-05	7.23E-05	9.21E-03	1.98E-09	6.24E-13	6.58E-09	4.33E-09	6.55E-03	1.45E-04
% OF INTERNAL			6.58E+00	3.23E+01	8.08E+01	7.46E+01	9.78E+01	9.81E+01	
9.59E+01	7.56E+00	9.43E+00	6.54E+01	3.49E+01	9.66E+01	6.91E+01	9.06E+01	9.53E+01	9.13E+01
9.92E+01	7.31E+00	7.39E+00	4.65E+01	6.57E+00	3.18E+01	2.73E+01	9.18E+00	5.17E+01	9.81E+01
% OF ALL PATHWAYS									
4.58E-04	7.55E+00	9.43E+00	2.98E+01						

9.92E+01	7.31E+00	7.39E+00	3.49E+01	6.67E-02	3.86E+00	6.50E+01	9.53E+01	9.13E+01
INHALATION								
1.13E-09	1.92E-03	3.37E-03	3.15E-03	1.36E-10	6.37E-24	1.79E-07	6.76E-09	3.11E-05
3.54E-10	8.79E-04	9.06E-04	1.85E-36	3.70E-09	2.16E-14	2.93E-09	4.51E-10	3.25E-04
% OF INTERNAL			1.06E-02	9.34E+01	6.77E+01	1.92E+01	2.54E+01	2.24E+00
4.13E+00	9.24E+01	9.06E+01	3.46E+01	6.51E+01	3.35E+00	3.09E+01	9.44E+00	4.73E+00
8.47E-01	9.27E+01	9.26E+01	5.35E+01	9.33E+01	6.66E+01	6.48E+00	3.13E+00	1.18E+00
1.98E-05	9.23E+01	9.06E+01	1.57E+01	6.51E+01	2.31E-03	1.72E+00	6.77E+00	4.73E+00
8.47E-01	9.27E+01	9.26E+01	4.15E+01					8.65E+00
AIR IMMERSION								
3.79E-07	5.40E-11	5.73E-13	6.57E-11	3.98E-15	3.62E-25	1.32E-09	1.48E-10	.00E+00
1.34E-17	6.17E-13	4.86E-13	6.05E-38	.00E+00	1.01E-12	6.38E-11	3.57E-13	.00E+00
% OF EXTERNAL			3.81E-07	2.35E-03	1.16E-01	5.57E-01	2.63E-02	5.50E-02
6.65E-03	2.49E-03	4.61E-04	9.42E-01	.00E+00	1.08E-01	3.96E-02	1.89E-02	.00E+00
2.98E-03	6.57E-04	5.56E-04	6.66E-03	1.95E-06	1.95E-03	3.69E-01	2.30E-02	2.59E-02
% OF ALL PATHWAYS			1.54E-08	5.14E-01	.00E+00	1.08E-01	3.74E-02	5.35E-03
6.65E-03	2.60E-06							.00E+00
3.21E-08	6.51E-08	4.96E-08	1.49E-03					.00E+00
GROUND SURFACE								
5.71E-03	2.17E-06	1.24E-07	2.79E-06	3.42E-12	6.47E-23	5.02E-06	2.70E-07	.00E+00
4.49E-13	9.40E-08	8.74E-08	6.36E-36	.00E+00	9.34E-10	1.61E-07	1.88E-09	.00E+00
% OF EXTERNAL			5.72E-03	1.00E+02	9.99E+01	9.94E+01	1.00E+02	9.99E+01
1.00E+02	1.00E+02	1.00E+02	9.91E+01	.00E+00	9.99E+01	1.00E+02	1.00E+02	.00E+00
1.00E+02	1.00E+02	1.00E+02	1.00E+02	8.29E-02	1.67E+00	6.59E+01	8.77E+01	4.71E+01
% OF ALL PATHWAYS			3.35E-03	5.40E+01	.00E+00	9.98E+01	9.44E+01	2.83E+01
1.00E+02	1.05E-01							.00E+00
1.08E-03	9.92E-03	8.93E-03	2.24E+01					.00E+00
INTERNAL								
2.73E-08	2.07E-03	3.72E-03	3.37E-03	2.01E-10	3.32E-23	7.06E-07	3.02E-07	1.67E-03
4.17E-08	9.48E-04	9.78E-04	5.36E-36	5.68E-09	6.45E-13	9.51E-09	4.78E-09	6.88E-03
% OF ALL PATHWAYS			1.98E-02	9.99E+01	9.83E+01	3.38E+01	1.23E+01	5.28E+01
4.78E-04	9.99E+01	1.00E+02	4.55E+01	1.00E+02	6.90E-02	5.58E+00	7.17E+01	1.00E+02
1.00E+02	1.00E+02	1.00E+02	7.76E+01					1.00E+02
EXTERNAL								
5.71E-03	2.17E-06	1.24E-07	2.79E-06	3.42E-12	6.51E-23	5.02E-06	2.70E-07	.00E+00
4.49E-13	9.40E-08	8.74E-08	6.42E-36	.00E+00	9.35E-10	1.61E-07	1.88E-09	.00E+00
% OF ALL PATHWAYS			5.72E-03	1.00E+02	6.62E+01	8.77E+01	4.72E+01	.00E+00
1.00E+02	1.05E-01	3.35E-03	5.45E+01	.00E+00	9.99E+01	9.44E+01	2.83E+01	.00E+00
1.08E-03	9.92E-03	8.93E-03	2.24E+01					.00E+00
TOTAL OVER ALL PATHWAYS								
5.71E-03	2.07E-03	3.72E-03	3.37E-03	2.04E-10	9.82E-23	5.73E-06	5.72E-07	1.67E-03
4.17E-08	9.48E-04	9.78E-04	1.18E-35	5.68E-09	9.36E-10	1.70E-07	6.67E-09	6.88E-03
			2.55E-02					1.59E-04

1PREPAR NAMELIST INPUT FILE

C-SHELL SCRIPT ==> HP.CSH RUNS THE CAP88 SYSTEM  
ALLRAD FILE ==> ALLRAD88 CONTAINS THE DCFs  
POP FILE ==> CONTAINS THE POPULATION GRID  
STARFILE ==> INEEL MESONET DATA  
RADRISK FILE ==> EPA

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IDAHO NATIONAL ENGINEERING & ENVIRONMENTAL LABORATORY  
BECHTEL BWXT, LLC APPLIED GEOSCIENCES DEPARTMENT

IDAHO FALLS  
ID  
83415-2107  
WAG 3 SOILS REMEDIATION RELEASES  
2003  
OPTION  
&OPTI OPTION=0,1,0,1,0,0,0,1,0,LIST=1,LIPO=0,  
NUTB=0,NSTB=0,NNTB=0,NTTB=1,NRTB=0,TSUBB=100. &END  
GRID  
&GRID NOL= 8,NOU= 8,NRL=1,NRU=1, IDIST= 13900 &END  
METEOROLOGICAL DATA  
&METE LID=800.0,RR=20.8,TA=279.,TG=7.28E-2,1.09E-1,1.455E-1,  
Z=10.,Z0=0.01,JO=0.001,DF=0.0 &END  
PHYSICAL STACK DATA  
1  
&PHYS PH=0.0,VEL=0.0,DIA=30 &END  
WIND FREQUENCY DATA  
STAR  
DEFAULT  
RADIONUCLIDE DATA  
19  
&RADI NUC='AM-241',REL=3.95E-04 &END  
&RADI NUC='CE-144',REL=2.47E-08 &END  
&RADI NUC='CO-58',REL=3.95E-20 &END  
&RADI NUC='CO-60',REL=5.60E-05 &END  
&RADI NUC='CS-134',REL=1.02E-05 &END  
&RADI NUC='CS-137',REL=6.83E-02 &END  
&RADI NUC='BA-137M',REL=6.83E-02,IAN=-1 &END  
&RADI NUC='NP-237',REL=2.66E-04 &END  
&RADI NUC='PU-238',REL=7.22E-04 &END  
&RADI NUC='RU-103',REL=1.38E-32 &END  
&RADI NUC='RU-106',REL=5.27E-07 &END  
&RADI NUC='RH-106',REL=5.27E-07,IAN=-1 &END  
&RADI NUC='SB-125',REL=1.65E-05 &END  
&RADI NUC='TE-125M',REL=4.13E-06,IAN=-1 &END  
&RADI NUC='SR-90',REL=9.97E-02 &END  
&RADI NUC='Y-90',REL=9.97E-02,IAN=-1 &END  
&RADI NUC='TC-99',REL=2.87E-06 &END  
&RADI NUC='U-234',REL=4.53E-04 &END  
&RADI NUC='U-238',REL=5.25E-04 &END  
MODIFICATIONS OF NUCLIDE DATA  
4  
&MODI NUC ='BA-137M', LAMRR=6.29E-05 &END  
&MODI NUC ='RH-106', LAMRR=1.88E-03 &END  
&MODI NUC ='TE-125M', LAMRR=6.85E-04 &END  
&MODI NUC ='Y-90', LAMRR=6.64E-05 &END  
AG DATA  
&AGDT FV=0.7,0.3,0.0,FB=0.442,0.558,0.0,FM=0.399,0.601,0.0 &END  
COMMENTS  
WAG 3 SOILS REMEDIATION AT INTEC  
SITES CPP-03; -34A&B; -37A,B,C; -67A&B; -97  
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1DARTAB NAMELIST INPUT FILE

INEL MAXIMUM INDIVIDUAL DARTAB OUTPUT TABLES  
&INPUT IHEAD=1,ICRP=1,  
ILOC=0,JLOC=0,PLOC=100.,ILET(1)=1,ILET(2)=1,  
DTABLE(1)=1,DTABLE(2)=0, DTABLE(3)=1, DTABLE(4)=1, DTABLE(5)=0,  
DTABLE(6)=0, DTABLE(7)=0,  
RTABLE(1)=0, RTABLE(2)=0, RTABLE(3)=0, RTABLE(4)=0, RTABLE(5)=0,  
RTABLE(6)=0, RTABLE(7)=0,  
FTABLE(1)=0, FTABLE(2)=0, FTABLE(3)=0, FTABLE(4)=0, FTABLE(5)=0,  
FTABLE(6)=0, FTABLE(7)=0,  
OUTPUT=.FALSE.,GSCFAC=0.5 &END  
&ORGN ORGN(1)='GONADS', ORGN(2)='BREAST', ORGN(3)='R MAR',  
ORGN(4)='LUNGS', ORGN(5)='THYROID',  
ORGN(6)='ENDOST', ORGN(7)='RMNDR', ORGN(8)='EFFEC',  
NORGN=8, TIME(1)=50.,  
TIME(2)=50., TIME(3)=50., TIME(4)=50., TIME(5)=50., TIME(6)=50.,  
TIME(7)=50., TIME(8)=50., TIME(9)=50.. &END  
&QFACTR LLET(1)=1.,LLET(2)=1.,LLET(3)=1.,LLET(4)=1.,LLET(5)=1.,  
LLET(6)=1.,LLET(7)=1.,LLET(8)=1.,LLET(9)=1.,LLET(10)=1.,  
LLET(11)=1.,LLET(12)=1.,LLET(13)=1.,LLET(14)=1.,LLET(15)=1..

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LLET(16)=1., LLET(17)=1., LLET(18)=1., LLET(19)=1., LLET(20)=1.,
HLET(1)=20., HLET(2)=20., HLET(3)=20., HLET(4)=20., HLET(5)=20.,
HLET(6)=20., HLET(7)=20., HLET(8)=20., HLET(9)=20., HLET(10)=20.,
HLET(11)=20., HLET(12)=20., HLET(13)=20., HLET(14)=20., HLET(15)=20.,
HLET(16)=20., HLET(17)=20., HLET(18)=20., HLET(19)=20., HLET(20)=20. &END
&CANCER NCANC=11,CANC(1)='LEUKEMIA',CANC(2)='BONE',CANC(3)='THYROID',
CANC(4)='BREAST',CANC(5)='LUNG',
CANC(6)='STOMACH',CANC(7)='BOWEL',CANC(8)='LIVER',CANC(9)='PANCREAS',
CANC(10)='URINARY',CANC(11)='OTHER',
RELABS(1)=1., RELABS(2)=1., RELABS(3)=1., RELABS(4)=1., RELABS(5)=1.,
RELABS(6)=1., RELABS(7)=1., RELABS(8)=1., RELABS(9)=1., RELABS(10)=1.,
RELABS(11)=1. &END
&GENTIC GENEFF=.FALSE., NGEN=3, GEN(1)='TESTES', GEN(2)='OVARIES', GEN(3)='AVERAGE'
GRFAC(1)=260., GRFAC(2)=690., REPPER=.014133, GLLET(1)=1., GLLET(2)=1,
GLLET(3)=1, GHLET(1)=20., GHLET(2)=20., GHLET(3)=20. &END
&LOCtbl NTLOC=0,
RNLOC(1)='WLSUM', RNLOC(2)='WLSUM', RNLOC(3)='WLSUM', RNLOC(4)='SUM',
RNLOC(5)='SUM', RNLOC(6)='SUM', RNLOC(7)='SUM',
OGLOC(1)='SUM', OGLOC(2)='SUM', OGLOC(3)='SUM', OGLOC(4)='SUM',
OGLOC(5)='SUM', OGLOC(6)='SUM', OGLOC(7)='SUM',
PTLOC(1)= 7, PTLOC(2)=7, PTLOC(3)=7, PTLOC(4)=7, PTLOC(5)=7, PTLOC(6)=7,
PTLOC(7)= 7,
FALOC(1)= 2, FALOC(2)=1, FALOC(3)=2, FALOC(4)=1, FALOC(5)=1, FALOC(6)=2,
FALOC(7)= 2,
HLLOC(1)= 1, HLLOC(2)=1, HLLOC(3)=1, HLLOC(4)=1, HLLOC(5)=1, HLLOC(6)=1,
HLLOC(7)= 1,
LTABLE(1)= 1, LTABLE(2)=3, LTABLE(3)=3, LTABLE(4)=1, LTABLE(5)=3,
LTABLE(6)=1, LTABLE(7)=3 &END
&ORGANF NORGB=7, ORGB(1)='GONADS', ORGB(2)='BREAST', ORGB(3)='R MAR',
ORGB(4)='LUNGS', ORGB(5)='THYROID',
ORGB(6)='ENDOST', ORGB(7)='RMNDR',
IPATH(1)=5, IPATH(2)=5, IPATH(3)=5, IPATH(4)=5, IPATH(5)=5, IPATH(6)=5,
IPATH(7)=5,
ORGDAT(1)= .25, ORGDAT(2)=.15, ORGDAT(3)=.12, ORGDAT(4)=.12,
ORGDAT(5)=.03, ORGDAT(6)=.03, ORGDAT(7)=.3 &END
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